6.0 Discussion

The site exhibited very little sign of general contamination. The site appears to have been cut and benched as part of previous earthworks during construction of the resort in the early to mid 1980's. A portion of the site is now covered by the resort buildings and facilities.

It is believed that that a small portion of the site previously contained a small scale banana plantation. Although low concentrations of residual OCPs and Arsenic (As) were detected within this area, analysis confirmed all chemical analytes complied with the site acceptance criteria *NEPM 1999 Table 5a Column A – Residential with Minimal Access to Soils* and the *NSW EPA Guidelines for Assessing Banana Plantation Sites.*

Although all samples analysed for Arsenic (As) were below the *NEPM 1999 Table 5a Column A – Residential with Minimal Access to Soils* and the *NSW EPA Guidelines for Assessing Banana Plantation Sites* site acceptance criteria, a total of six (6) samples exceeded the Phytotoxicity Criteria of 20mg/kg.

Phytotoxicity (i.e. toxicity to plants) is used as the indicative environmental effect to be dealt with in the context of land redevelopment. The use of a single criteria for all ecosystems has significant limitations as biological responses to the chronic or acute effects of toxicity vary significantly between species. Bioavailability depends on soil conditions, geography, climate and species behaviour, which govern exposure pathways and need to be factored into any assessment. The provisional phytotoxicity-based investigation levels are criteria that are intended for use as a screen guide only. Phytotoxicity criteria are not usually associated with industrial/commercial or open space developments.

In the event of any future earthworks it is envisaged project design will further limit any bioavailability to the local ecology. All materials generated from this area either being disposed of or beneficially reused on site should be managed appropriately.

Asbestos containing fibro fragments have been found within the fill layer located in the elevated plateau area to the east of the restaurant. The fill covers an area of approximately 150m^2 to a maximum depth of 0.3m. Soil samples collected from the fill

and immediate surrounds did not indicate the presence of either fibrous or bonded asbestos containing materials.

7.0 Conclusions

Soil analysis from the Site provided no evidence to infer the presence of contamination on the site with chemical analyte concentrations within soils indicative of natural background levels and are within the site acceptance criteria *NEPM 1999 Table 5a Column A – Residential with Access to Soils NEPM 1999 Table 5a Column A – Residential with Minimal Access to Soils* and the *NSW EPA Guidelines for Assessing Banana Plantation Sites.* Potential phytotoxicity effects should be considered in the design of earthworks, structural placement and landscaping of the proposed development.

Asbestos cement sheet fragments of a bonded nature were found within localised fill materials. Asbestos based materials were also identified within the structures presently located on the site. The fill materials and structural asbestos materials prior to demolition or future development should be handled in accordance with the report titled 'Hazardous Materials Survey and Register, Former Pelican Beach Resort 740-742 Pacific Highway, Sapphire Beach NSW 2450', prepare by DLA dated June 2009.

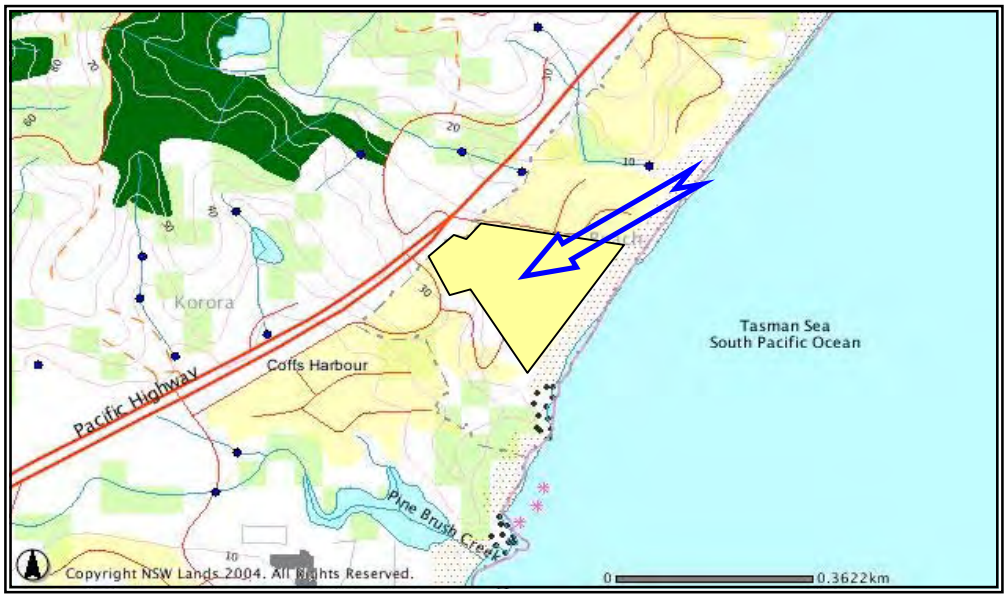
Any waste materials generated on Site by excavation or demolition should be characterised and disposed of in accordance with the NSW DECC 2008 Waste Guidelines.

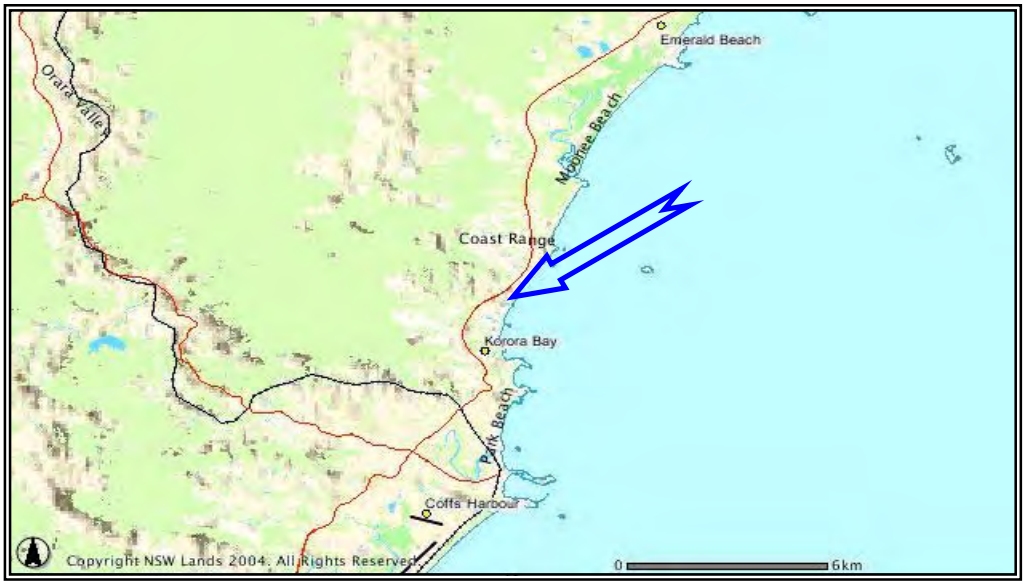
Based on this Site Assessment the Site is deemed suitable for the most sensitive intended land use, compliant with the requirements as outlined in *Table 5a Column A – Residential with Access to Soils, NEPM 1999,* and the *NSW EPA Guidelines for Assessing Banana Plantation Sites.* A Remedial Action Plan is therefore not required to address contamination concerns.

If the current land use of the site, i.e. Residential with Minimal Access to Soils, is to be changed in the future the Site Assessment should be reviewed to ensure compliance with suitable soil investigation levels for the appropriate end land use or zoning.

Figure 1

Site Location





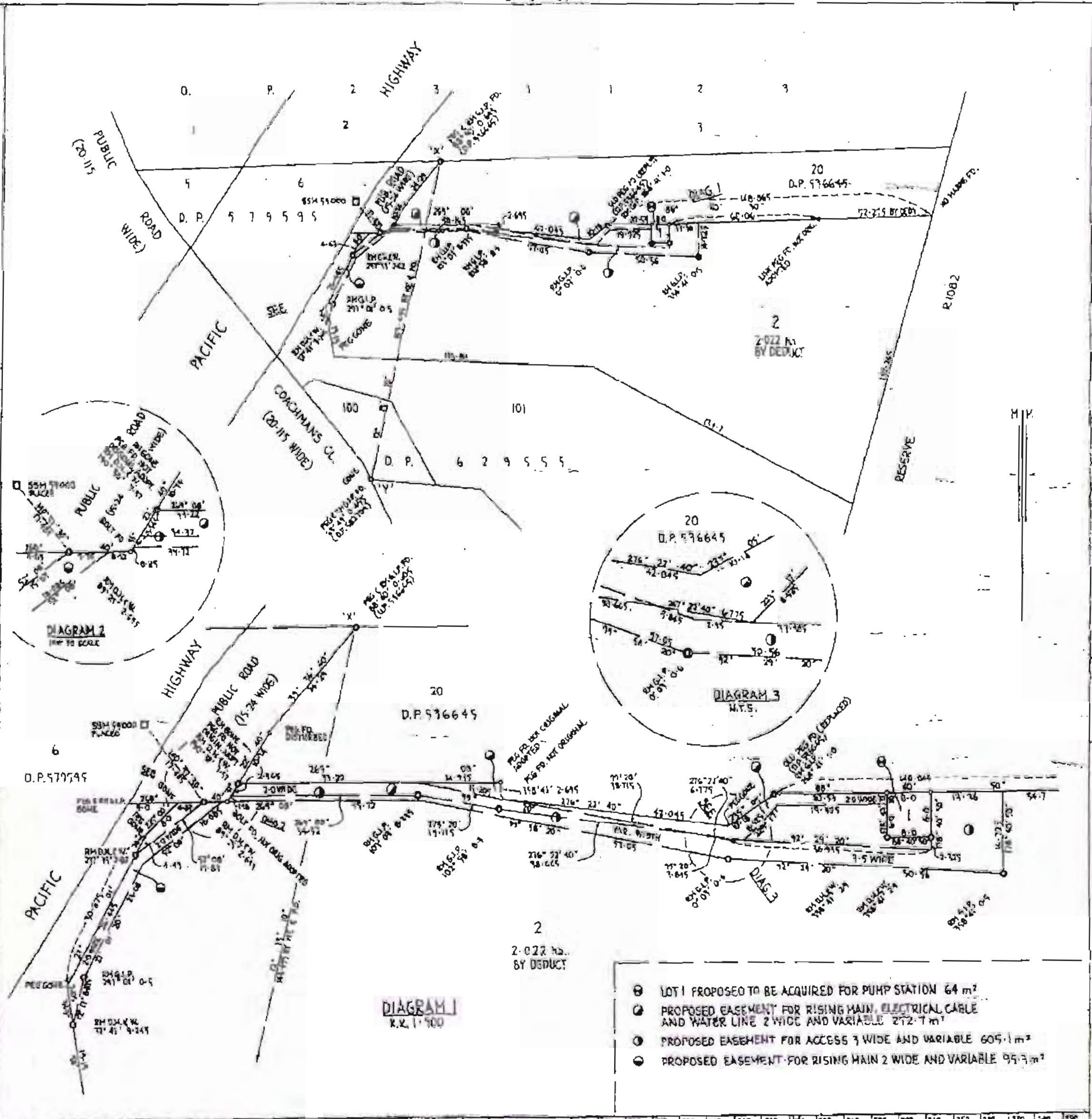
DAVID LANE ASSOCIATES Environment Health Safety "Ayrfield" Lot 18 Old North Road - Rothbury	**DESIGNED:** DLA	SITE LOCATION	
	COMPILED: NR	**CLIENT:** Attentus Projects and Property Pty Ltd	**DRAWING:** 8/03/2006
	PROJ. No.	**LOCATION:** 740-742 Pacific Highway Sapphire Beach NSW	**FIGURE:** 1

Figure 2

Site Survey

PLAN FORM 2

Plan Drawing only to appear in this space



OFFICE USE ONLY

DP 800836

Registered: 25.2.1990

Title System: TORRENS

Purpose: ACQUISITION

Ref. Map: ~~9537-4-S~~ Y0950-54

Last Plan: D.P. 582709

PLAN OF PROPOSED SUBDIVISION OF LOT 1 D.P. 582709 AND EASEMENTS FOR RISING MAIN, ELECTRICAL CABLE, WATER LINE AND ACCESS

Lengths are in metres. Reduction Ratio 1:1250

City: COFFS HARBOUR

Locality: SAPPHIRE

Parish: MOONEE

County: FITZROY

ROBERT MAX ENGEL, PUBLIC WORKS DEPT. - COFFS HARBOUR

21st APRIL 1989

Plans used in preparation of survey/compilation: D.P. 536645, D.P. 582709, D.P. 231123, D.P. 579595, D.P. 629555

PANEL FOR USE ONLY for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

LOT 1 AND EASEMENTS PROPOSED TO BE ACQUIRED

COFFS HARBOUR NORTHERN AREAS SEWERAGE

PUMPING STATION No 67

N00 2E1A

S.B. 50772

Crown Lands Office Approval

Council Clerk's Certificate

Surveyor's reference: S.B. 50772 M.P.D.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

10	20	30	40	50	60	70 Table of mm	110	120	130	140

PLAN FORM 2

Plan Drawing only to appear in this space

• OFFICE USE ONLY (3)

D.P. 629555

Registered: 16-12-1982

C.A. Nº156)1982 of 2-11-1982

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: COFFS HARBOUR SH. 26*

Last Plan: D.P. 626974

PLAN OF SUBDIVISION OF LOTS 11 AND 12 DP626974

Reduction Ratio 1:1250

Lengths are in metres.

City: COFFS HARBOUR

Locality: KORORA

Parish: MOONEE

County: FITZROY

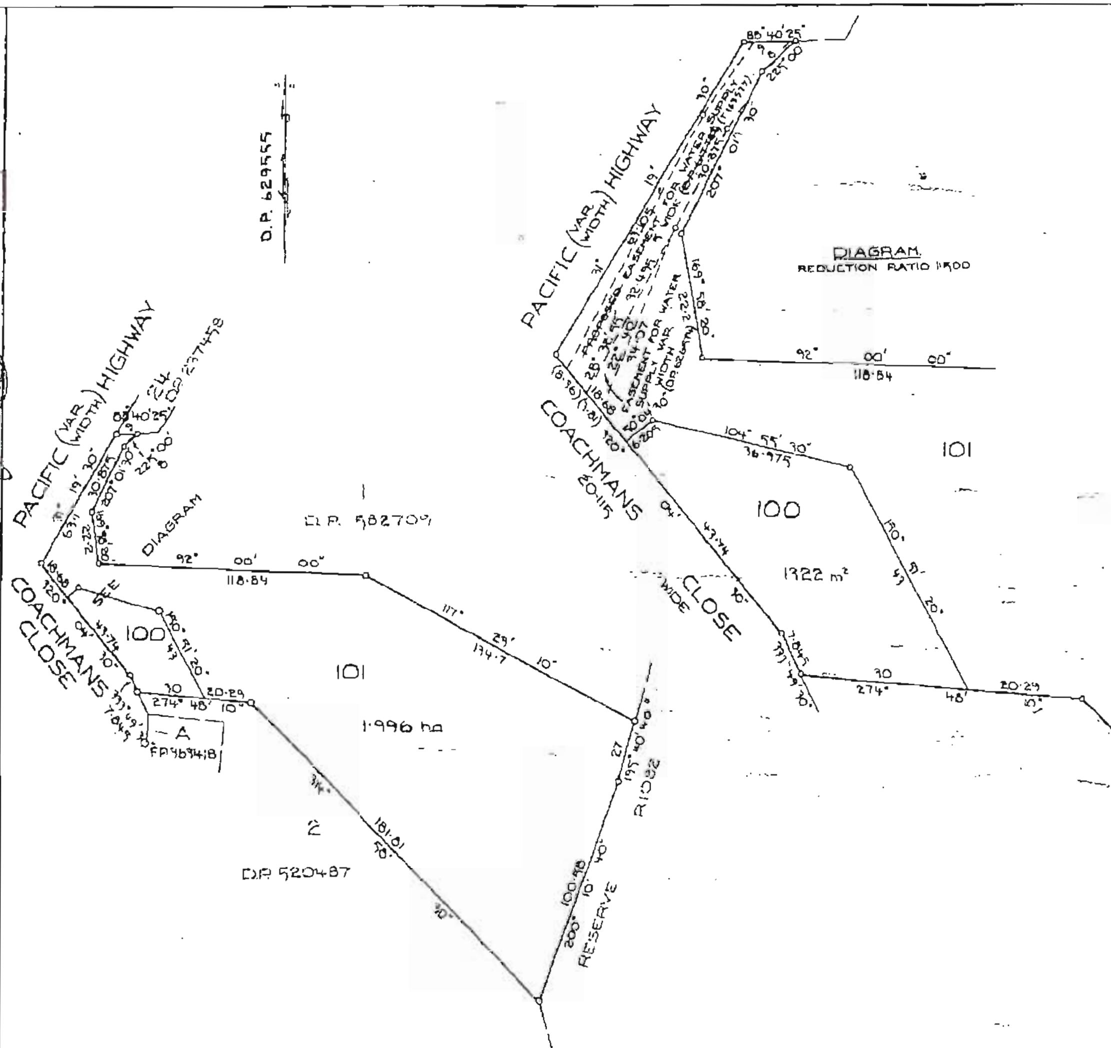
This is sheet 1 of my plan in ... sheets.

Kenneth Blair of Blair & Longley

P.O. Box 453 Coffs Harbour

19th October 1982

SURVEYOR'S REFERENCE: 621



Signatures and seals only.

THE COMMON SEAL of LISMORE MANAGEMENT PTY. LIMITED was hereunto affixed by authority of the Board of Directors in the presence of the Director whose signature appears opposite in the presence of:

Secretary

GRAHAM EDGAR HOPWOOD

PETER LAWRENCE GOGGIN
JUSTICE OF THE PEACE

Council Clerk's Certificate

Subdivision

156/1982

Date 2-11-1982

DEPUTY Council Clerk

M.P.D.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

AMENDMENTS AND/OR ADDITIONS NOTED ON PLAN IN REGISTRAR GENERAL'S OFFICE.

I, Bruce Richard Davies, Under Secretary for Lands and Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this day.

4th September, 1984

Figure 3

Site Layout with Sampling Locations

LEGEND

- Phase 1 Sample Location
- Phase 2 Sample Location

DLA Environmental

Title: Pelican Beach Resort - Site Layout with Sample Locations			
Client: Attentus Projects	**Figure No:** 3		**Date:** 26.5.09
Newcastle Office Phone (02) 4949 3800 Fax (02) 4949 3811 / Sydney Office Phone (02) 9476 1765 Fax (02) 9476 1557	**Scale**	**Sheet** 1 of 1	**Revision** 1

Figure 4

Concept Plan


signage & seating area at start of link to "Coastal Walk"
link to Coachmans Close
feature trees as landmark
carpark for recreational/ communal facilities
terraced sub-tropical gardens
resting location on path
existing Eucalypts on bank
Hoop Pines at entry screen planting
visitor carpark
resting locations along link to "Coastal Walk"
7(a) vegetation retained, weeded & protected with buffer planting
public beach access & link to Coastal Walk
public seating area
communal picnic area
access located where weeds removed. Weeded areas to be revegetated & fenced
pathway loop to create circuit
link to beach access
retained dune vegetation
dune protection fence
planting of indigenous coastal species
parkland with seating, picnic & BBQ areas, shade trees & grassed open play spaces
seats below retained Pandanus
beach access
picnic & BBQ areas
shaded seating areas
grassed open play areas
existing Pandanus retained
gardens to beachfront homes
pathway loop to create circuit
link to beach access
dune revegetation planting
dune protection fence
retaining walls with terraced gardens
grassed terraces with shade trees
buffer planting
landscaped bio-retention area
grassed sediment basin with planting to edges
screen planting
stormwater easement
BEACH
CAMPBELLS
100 year coastal hazard line (as per Willing and Partners Map 1 Campbell's Beach Hazard Lines September 1999)
CHCC Residential Tourist Lands DCP Foreshore Building Line
LEGEND
site boundary
internal road
existing 7(a) vegetation
existing dune vegetation
trees to be retained
trees to be removed
dune revegetation
buffer planting to 7(a) vegetation
landmark tree at entry
flowering feature tree
feature tree to public zone
shade trees to garden
palm group
Pandanus (new & retained)
street trees (informal arrangement)
subtropical planting
turf
pedestrian pathway
boardwalk
road pavement
retaining walls
resting location on path (level area & seat)
seat to parkland
picnic & BBQ facility to parkland
"Coastal Walk" signage
dune protection fence
pool fence
Scale
jackie amos landscape architect
Sapphire
SK.01 Landscape Masterplan
CONCEPT PLAN
SK 01

NOTE -
LOT 41 - ROAD AND ROW
(RIGHT OF WAY) COMMUNITY LOT

NOTE -
LOT 41 - ROAD AND ROW
(RIGHT OF WAY) COMMUNITY LOT


NOTE -
LOT 41 - ROAD AND ROW
(RIGHT OF WAY) COMMUNITY LOT

Figure 5

Asbestos Materials

LEGEND

- Asbestos Sample Location
- Asbestos Contaminated Fill

DLA Environmental

Title: Pelican Beach Resort - Asbestos Locations

Client:	Figure No:	Date:
Attentus Projects	5	26.5.09

Newcastle Office
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Fax (02) 4949 3811

Sydney Office
Phone (02) 9476 1765
Fax (02) 9476 1557

Scale	Sheet	Revision
	1 of 1	1

Figure 6

Arsenic Exceedences

LEGEND

- Arsenic Phytotoxicity Exceedence

DLA Environmental	**Title:** Pelican Beach Resort - Phytotoxicity Aresnic Exceedances		
Client: Attentus Projects	**Figure No:** 6		**Date:** 1.6.09
Newcastle Office Phone (02) 4949 3800 Fax (02) 4949 3811 Sydney Office Phone (02) 9476 1765 Fax (02) 9476 1557	**Scale**	**Sheet** 1 of 1	**Revision** 1

Appendix A1

Sample Log

Sample Log - Pelican Beach Resort Phase 2

Sample Location	Sample No.	Sample Depth	Sample Description	Note/Comment	Petroleum			PAH		Pesticides		PCB	Heavy Metals								
					BTEX	VTPH	TPH	B(a)P	PAH	OCP	OPP		As	Cd	Cr	Cu	Ni	Pb	Zn	Hg	Report
C1	1	0.15	Brown Loam		-	-	-	ND	ND	ND	-	-	6	<0.1	8	13	3	18	37	0.11	E042990
C1	2	0.3	Orange Clays		-	-	-	ND	ND	ND	-	-	5	<0.1	10	11	3	17	12	<0.05	E042990
C2	1	0.15	Dark Brown Clay Loam with Minor		ND	ND	ND	ND	ND	ND	ND	ND	3	<0.1	7	11	4	16	25	0.09	E042990
C2	1A	0.15	Dark Brown Clay Loam with Minor	Intra Laboratory Dup	ND	ND	ND	ND	ND	ND	ND	ND	3	<0.1	6	9	3	17	21	0.09	E042990
C2	2	0.3	Dark Loamy Sands		-	-	-	ND	ND	1.43	-	-	35	0.2	7	15	5	29	41	0.14	E042990
C2	3	0.75	Orange Clays	Asphalt/Charcoal	-	-	-	-	-	0.09	-	-	6	<0.1	13	8	3	27	17	0.07	E042990
C3	1	0.3	Dark Brown Loam Clay		ND	ND	ND	ND	ND	ND	ND	ND	5	<0.1	9	23	3	18	22	0.05	E042990
C3	1A	0.3	Dark Brown Loam Clay	Inta Dup	ND	ND	ND	ND	ND	ND	ND	ND	9	<0.1	8	18	4	15	42	0.06	E042990
C4	1	0.15	Dark Brown Clay Loam		-	-	-	ND	ND	ND	-	-	15	<0.1	9	7	3	13	20	0.07	E042990
C4	2	0.9	Orange Clays	Undeerlying Sandy	-	-	-			ND	-	-	3	<0.1	6	13	3	16	19	<0.05	E042990
C5	1	0.15	Dark Orange Brown Clays		-	-	-	ND	ND	ND	-	-	21	0.3	8	13	4	36	31	0.13	E042990
C9	1	0.15	Grey Gavelly Fill Sands	Asbestos Fragment Present, Asbestos Sample Also Collected Surrounding Location	-	-	-	ND	ND	ND	-	-	15	0.1	3	5	2	20	39	0.1	E042990
C9	2	0.2	Orange Clays		-	-	-	ND	ND	ND	-	-	4	<0.1	6	11	2	14	83	<0.05	E042990
C10	1	0.15	Dark Brown Clay Loam		-	-	-	-	-	ND	-	-	7	<0.1	5	6	2	13	23	0.07	E042990
C11	1	0.15	Dark Brown Loam Clay		ND	ND	ND	ND	ND	ND	ND	ND	17	0.1	6	8	2	24	39	0.09	E042990
C11	1A	0.15	Dark Brown Loam Clay	Intra Laboratory Dup	ND	ND	ND	ND	ND	ND	ND	ND	18	0.1	6	6	2	26	39	0.08	E042990
C11	1B	0.15	Dark Brown Loam Clay	Inter Laboratory Dup	ND	ND	ND	ND	ND	ND	ND	ND	20	<0.5	8	7	3	22	46	<0.1	29217
C11	2	0.2	Orange Clays		-	-	-	-	-	ND	-	-	40	0.2	9	7	3	31	22	0.09	E042990
C12	1	0.15	Brown Sandy Loam		-	-	-	ND	ND	ND	-	-	5	0.5	11	7	5	16	28	0.07	E042990
C12	2	0.6	Orange Clays		-	-	-	-	-	ND	-	-	4	<0.1	9	13	5	19	21	0.16	E042990
C13	1	0.2	Orange Clays	Beneath Pavers	-	-	-	-	-	ND	-	-	5	<0.1	14	20	4	26	25	0.08	E042990
C17	1	0.15	Dark Clay Loam/Red Clays	Asbestos Sample Also	-	-	-	-	-	0.06	-	-	40	0.8	9	20	2	43	71	0.1	E042990
C18	1	0.15	Orange Clays	Asbestos Sample Also	-	-	-	-	-	ND	-	-	3	<0.1	9	15	3	22	31	<0.05	E042990
C19	1	0.15	Orange Clays		-	-	-	ND	ND	ND	-	-	3	<0.1	9	14	4	14	26	0.05	E042990
C20	1	0.25	Orange Clays		-	-	-	-	-	ND	-	-	5	<0.1	12	13	4	14	28	0.06	E042990
C21	1	0.15	Orange Clays	Asbestos Sample Also	-	-	-	-	-	ND	-	-	8	<0.1	11	19	3	40	40	0.07	E042990
C22	1	0.15	Grey Gavelly Fill Sands	Asbestos Sample Also	-	-	-	ND	ND	ND	-	-	6	<0.1	9	32	16	36	70	0.08	E042990
C22	2	0.4	Yellow Fill Sandy Gravel	Trees Burried to the N	-	-	-	-	-	ND	-	-	4	<0.1	7	16	6	23	35	0.05	E042990
C25	1	0.3	Orange Clays		-	-	-	ND	ND	ND	-	-	6	<0.1	10	13	3	16	22	0.05	E042990
C26	1	0.15	Yellow/Grey Beach Sands and		-	-	-	-	-	-	-	-	7	<0.1	9	7	3	10	17	0.07	E042990
C27	1	0.15	Orange Clays and Dark Loam		-	-	-	ND	ND	ND	-	-	8	<0.1	4	3	2	3	9	<0.05	E042990
C27	2	0.3	Yellow/Grey Sands		-	-	-	-	-	ND	-	-	8	<0.1	4	3	1	4	8	<0.05	E042990
C28	1	0.15	Loamy Sands Dominated by		-	-	-	-	-	-	-	-	8	<0.1	9	73	4	8	36	0.07	E042990
C31	1	0.15	Yellow Sands		-	-	-	-	-	-	-	-	8	<0.1	5	6	<1	<2	6	<0.05	E042990
C32	1	0.15	Loamy Sands		-	-	-	-	-	-	-	-	3	<0.1	2	2	<1	4	12	0.06	E042990
C33	1	0.15	Loamy Sands		-	-	-	-	-	-	-	-	4	<0.1	2	<2	<1	3	7	<0.05	E042990
C34	1	0.15	Loamy Sands		-	-	-	-	-	-	-	-	3	<0.1	2	<2	<1	3	7	<0.05	E042990
C35	1	0.15	Loamy Sands		-	-	-	-	-	-	-	-	4	<0.1	3	2	1	3	10	0.06	E042990
C37	1	0.15	Loamy Sands		-	-	-	-	-	-	-	-	4	<0.1	3	3	1	4	12	0.06	E042990
C38	1	0.15	Loamy Sands		-	-	-	-	-	-	-	-	4	<0.1	3	<2	1	3	8	0.06	E042990
C39	1	0.15	Red/Orange Clays and Loamy Sands		-	-	-	-	-	-	-	-	12	<0.1	10	24	3	15	42	0.09	E042990
C40	1	0.15	Loamy Sands		-	-	-	-	-	-	-	-	5	<0.1	6	14	4	13	29	0.08	E042990
C42	1	0.15	Loamy Sands		-	-	-	-	-	-	-	-	4	<0.1	3	4	1	6	12	0.07	E042990
C43	1	0-0.3	Loamy Sands		-	-	-	-	-	-	-	-	4	<0.1	3	3	2	4	12	<0.05	E042990
C45	1	0.15	Loamy Sands		-	-	-	-	-	-	-	-	6	<0.1	7	9	2	9	21	0.08	E042990
C46	1	0-0.2	Orange Clys		-	-	-	-	-	-	-	-	5	<0.1	8	15	2	25	20	0.13	E042990
C47	1	0.15	Loamy Sands		ND	ND	ND	ND	ND	ND	ND	ND	4	<0.1	4	4	2	7	28	0.07	E042990
C48	1	0.15	Loamy Sands/Clay		ND	ND	ND	ND	ND	ND	ND	ND	6	<0.1	3	3	1	6	8	0.05	E042990
C48	1A	0.15	Loamy Sands/Clay	Intra Laboratory Dup	ND	ND	ND	ND	ND	ND	ND	ND	8	<0.1	4	7	2	10	12	0.06	E042990
C48	1B	0.15	Loamy Sands/Clay	Inter Laboratory Dup	ND	ND	ND	ND	ND	ND	ND	ND	11	<0.5	6	9	3	13	17	<0.1	29217
C49	1	0.15	Loamy Sands/Clay		-	-	-	-	-	-	-	-	43	0.1	22	16	11	17	45	0.21	E042990
C50	1	0.15	Loamy Sands/Clay		-	-	-	ND	ND	ND	-	-	19	<0.1	6	10	2	18	23	0.06	E042990
C50	2	0.3	Loamy Sands		-	-	-	-	-	-	-	-	7	<0.1	4	9	1	9	10	<0.05	E042990
C52	1	0.15	Brown/Gey Sands		-	-	-	ND	ND	ND	-	-	4	<0.1	3	5	2	4	10	<0.05	E042990
C53	1	0.15	Brown/Gey Sands		-	-	-	ND	ND	ND	-	-	3	<0.1	4	9	2	8	8	0.05	E042990
C55	1	0.15	Brown/White Sands		ND	ND	ND	ND	ND	ND	ND	ND	3	<0.1	3	3	2	4	9	<0.05	E042990
C55	1A	0.15	Brown/White Sands	Intra Laboratory Dup	ND	ND	ND	ND	ND	ND	ND	ND	4	<0.1	3	4	2	4	10	<0.05	E042990
C55	1B	0.15	Brown/White Sands	Inter Laboratory Dup	ND	ND	ND	-	-	ND	ND	ND	<4	<0.5	5	6	3	6	10	<0.1	29217
C56	1	0.15	Brown/White Sands		-	-	-	-	-	-	-	-	4	<0.1	3	2	<1	2	5	<0.05	E042990
C57	1	0.15	Orange Clays		-	-	-	-	-	ND	-	-	8	<0.1	14	26	6	25	47	0.11	E042990
C58	1	0.15	Orange/Grey Motled Clays		ND	ND	ND	ND	ND	-	ND	ND	4	<0.1	13	26	5	68	28	0.14	E042990
C58	1A	0.15	Orange/Grey Motled Clays	Intra Laboratory Dup	ND	ND	ND	ND	ND	ND	ND	ND	4	<0.1	13	14	4	27	23	0.23	E042990
C59	1	0.15	Yellow Clays		-	-	-	-	-	ND	-	-	2	<0.1	4	6	2	11	14	0.07	E042990
C60	1	0.15	Loam Dominated by Root Mass		-	-	-	-	-	ND	-	-	2	<0.1	5	17	4	18	28	0.09	E042990
BH1	-	0.1			-	-	-	ND	ND	ND	ND	ND	20	0.3	15	3.7	170	57	54	<0.05	43518
BH1	-	0.5			-	-	-	ND	ND	-	-	-	9	0.3	17	3.3	44	24	34	<0.05	43518
BH2	-	0.3			-	-	-	ND	ND	ND	ND	ND	5	<0.1	2.5	0.6	4.6	1	1.1	<0.05	43518
BH2	-	0.3A		Intra Laboratory Dup	ND	ND	ND	ND	ND	ND	ND	ND	5	<0.1	2.4	0.6	4	1	1	<0.05	43518
BH2	-	1			ND	ND	ND	ND	ND	-	-	-	7	<0.1	2.3	0.7	2.8	<1	0.8	<0.05	43518
BH3	-	0.3			-	-	-	ND	ND	-	-	-	9	0.2	11	6.8	56	14	29	<0.05	43518
BH3	-	1			ND	ND	ND	ND	ND	ND	ND	<0.1	7	0.2	6	6.6	39	9.2	15	<0.05	43518
BH4	-	0.5			ND	ND	ND	ND	ND	-	-	-	9	0.3	14	11	120	19	69	<0.05	43518
HS-1	-	1			-	-	-	ND	ND	-	-	-	24	0.3	20	3.7	79	41	42	<0.05	43518
BH3-W	BH3	-	Water Sample		ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	3	2	1	53	ND	43518

Appendix A2

95% UCL Calculations

From File: C:\Documents and Settings\DLA\Desktop\Book2.wst

Summary Statistics for Raw Full Data Sets

Variable	NumObs	Minimum	Maximum	Mean	Median	Variance	SD	MAD/0.675	Skewness	Kurtosis	CV
Arsenic	24	2	43	7.708	4	78.3	8.849	2.965	3.155	11.27	1.148
Cadmium	56	0.05	0.25	0.0616	0.05	0.0020	0.0457	0	3.953	14.39	0.742
Chromium	24	3	22	6.625	4.5	22.94	4.79	2.224	1.817	3.429	0.723
Copper	27	1	26	8.741	7	50.66	7.118	5.93	1.153	0.703	0.814
Nickel	28	0.5	11	2.482	2	4.657	2.158	1.483	2.521	8.498	0.869
Lead	25	1	68	14.56	9	215.3	14.67	7.413	2.316	6.702	1.008
Zinc	24	5	47	20.25	15.5	170	13.04	10.38	0.976	-0.183	0.644
Mercury	64	0.025	0.23	0.0704	0.065	0.0017	0.0423	0.0297	1.585	3.576	0.602

	General UCL Statistics for Full Data Sets
User Selected Options	
From File	W:\Current Projects\DL1800_Attentus Projects_Sapphire Beach Resort\METALS WORKBOOK.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Arsenic

General Statistics

Number of Valid Samples	24	Number of Unique Samples	11
Number of Missing Values	40		

Raw Statistics		Log-transformed Statistics	
Minimum	2	Minimum of Log Data	0.693
Maximum	43	Maximum of Log Data	3.761
Mean	7.708	Mean of log Data	1.702
Median	4	SD of log Data	0.753
SD	8.849		
Coefficient of Variation	1.148		
Skewness	3.155		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.592	Shapiro Wilk Test Statistic	0.903
Shapiro Wilk Critical Value	0.916	Shapiro Wilk Critical Value	0.916
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	10.8	95% H-UCL	10.32
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	12.38
95% Adjusted-CLT UCL	11.92	97.5% Chebyshev (MVUE) UCL	14.64
95% Modified-t UCL	11	99% Chebyshev (MVUE) UCL	19.06
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	1.441	Data do not follow a Discernable Distribution (0.05)	
Theta Star	5.35		
nu star	69.16		
Approximate Chi Square Value (.05)	51.02	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0392	95% CLT UCL	10.68
Adjusted Chi Square Value	49.92	95% Jackknife UCL	10.8
		95% Standard Bootstrap UCL	10.62
Anderson-Darling Test Statistic	1.587	95% Bootstrap-t UCL	14.62
Anderson-Darling 5% Critical Value	0.76	95% Hall's Bootstrap UCL	20.85
Kolmogorov-Smirnov Test Statistic	0.224	95% Percentile Bootstrap UCL	10.88
Kolmogorov-Smirnov 5% Critical Value	0.181	95% BCA Bootstrap UCL	12
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	15.58
		97.5% Chebyshev(Mean, Sd) UCL	18.99
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	25.68
95% Approximate Gamma UCL	10.45		
95% Adjusted Gamma UCL	10.68		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	15.58

Cadmium

General Statistics

Number of Valid Samples	56	Number of Unique Samples	3
Number of Missing Values	8		

Raw Statistics		Log-transformed Statistics	
Minimum	0.05	Minimum of Log Data	-2.996
Maximum	0.25	Maximum of Log Data	-1.386
Mean	0.0616	Mean of log Data	-2.897
Median	0.05	SD of log Data	0.374
SD	0.0457		
Coefficient of Variation	0.742		
Skewness	3.953		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.529	Lilliefors Test Statistic	0.532
Lilliefors Critical Value	0.118	Lilliefors Critical Value	0.118
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0718	95% H-UCL	0.0648
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0724
95% Adjusted-CLT UCL	0.0751	97.5% Chebyshev (MVUE) UCL	0.0781
95% Modified-t UCL	0.0724	99% Chebyshev (MVUE) UCL	0.0894
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	4.459	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0138		
nu star	499.5		
Approximate Chi Square Value (.05)	448.6	Nonparametric Statistics	
Adjusted Level of Significance	0.0457	95% CLT UCL	0.0717
Adjusted Chi Square Value	447.4	95% Jackknife UCL	0.0718
		95% Standard Bootstrap UCL	0.0713
Anderson-Darling Test Statistic	19.22	95% Bootstrap-t UCL	0.0754
Anderson-Darling 5% Critical Value	0.753	95% Hall's Bootstrap UCL	0.0688
Kolmogorov-Smirnov Test Statistic	0.539	95% Percentile Bootstrap UCL	0.0723
Kolmogorov-Smirnov 5% Critical Value	0.119	95% BCA Bootstrap UCL	0.0795
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0882
		97.5% Chebyshev(Mean, Sd) UCL	0.0998
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.122
95% Approximate Gamma UCL	0.0686		
95% Adjusted Gamma UCL	0.0688		
Potential UCL to Use		Use 95% Student's-t UCL	0.0718
		or 95% Modified-t UCL	0.0724

Chromium

General Statistics

Number of Valid Samples	24	Number of Unique Samples	10
Number of Missing Values	40		

Raw Statistics		Log-transformed Statistics	
Minimum	3	Minimum of Log Data	1.099
Maximum	22	Maximum of Log Data	3.091
Mean	6.625	Mean of log Data	1.699
Median	4.5	SD of log Data	0.597
SD	4.79		
Coefficient of Variation	0.723		
Skewness	1.817		

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.763	Shapiro Wilk Test Statistic	0.878
Shapiro Wilk Critical Value	0.916	Shapiro Wilk Critical Value	0.916
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	8.301	95% H-UCL	8.452
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	10.12
95% Adjusted-CLT UCL	8.621	97.5% Chebyshev (MVUE) UCL	11.7
95% Modified-t UCL	8.361	99% Chebyshev (MVUE) UCL	14.79
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.45	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.705		
nu star	117.6		
Approximate Chi Square Value (.05)	93.54	Nonparametric Statistics	
Adjusted Level of Significance	0.0392	95% CLT UCL	8.233
Adjusted Chi Square Value	92.03	95% Jackknife UCL	8.301
		95% Standard Bootstrap UCL	8.22
Anderson-Darling Test Statistic	1.301	95% Bootstrap-t UCL	9.008
Anderson-Darling 5% Critical Value	0.752	95% Hall's Bootstrap UCL	9.006
Kolmogorov-Smirnov Test Statistic	0.214	95% Percentile Bootstrap UCL	8.375
Kolmogorov-Smirnov 5% Critical Value	0.179	95% BCA Bootstrap UCL	8.583
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	10.89
		97.5% Chebyshev(Mean, Sd) UCL	12.73
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	16.35
95% Approximate Gamma UCL	8.327		
95% Adjusted Gamma UCL	8.464		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	10.89

Copper

General Statistics			
Number of Valid Samples	27	Number of Unique Samples	15
Number of Missing Values	37		

Raw Statistics		Log-transformed Statistics	
Minimum	1	Minimum of Log Data	0
Maximum	26	Maximum of Log Data	3.258
Mean	8.741	Mean of log Data	1.805
Median	7	SD of log Data	0.941
SD	7.118		

Coefficient of Variation	0.814		
Skewness	1.153		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.87	Shapiro Wilk Test Statistic	0.947
Shapiro Wilk Critical Value	0.923	Shapiro Wilk Critical Value	0.923
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	11.08	95% H-UCL	14.75
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	17.49
95% Adjusted-CLT UCL	11.32	97.5% Chebyshev (MVUE) UCL	21.06
95% Modified-t UCL	11.13	99% Chebyshev (MVUE) UCL	28.06
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	1.379	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	6.341		
nu star	74.44		
Approximate Chi Square Value (.05)	55.57	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0401	95% CLT UCL	10.99
Adjusted Chi Square Value	54.53	95% Jackknife UCL	11.08
		95% Standard Bootstrap UCL	10.93
Anderson-Darling Test Statistic	0.256	95% Bootstrap-t UCL	11.32
Anderson-Darling 5% Critical Value	0.763	95% Hall's Bootstrap UCL	11.13
Kolmogorov-Smirnov Test Statistic	0.0852	95% Percentile Bootstrap UCL	11.15
Kolmogorov-Smirnov 5% Critical Value	0.171	95% BCA Bootstrap UCL	11.44
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	14.71
		97.5% Chebyshev(Mean, Sd) UCL	17.3
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	22.37
95% Approximate Gamma UCL	11.71		
95% Adjusted Gamma UCL	11.93		
Potential UCL to Use		Use 95% Approximate Gamma UCL	11.71

Nickel

General Statistics

Number of Valid Samples	28	Number of Unique Samples	8
Number of Missing Values	36		

Raw Statistics		Log-transformed Statistics	
Minimum	0.5	Minimum of Log Data	-0.693
Maximum	11	Maximum of Log Data	2.398
Mean	2.482	Mean of log Data	0.612
Median	2	SD of log Data	0.804
SD	2.158		
Coefficient of Variation	0.869		
Skewness	2.521		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.74	Shapiro Wilk Test Statistic	0.911
Shapiro Wilk Critical Value	0.924	Shapiro Wilk Critical Value	0.924

Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	3.177	95% H-UCL	3.598
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	4.337
95% Adjusted-CLT UCL	3.361	97.5% Chebyshev (MVUE) UCL	5.128
95% Modified-t UCL	3.209	99% Chebyshev (MVUE) UCL	6.682
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.657	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1.498		
nu star	92.81		
Approximate Chi Square Value (.05)	71.6	Nonparametric Statistics	
Adjusted Level of Significance	0.0404	95% CLT UCL	3.153
Adjusted Chi Square Value	70.45	95% Jackknife UCL	3.177
		95% Standard Bootstrap UCL	3.133
Anderson-Darling Test Statistic	0.98	95% Bootstrap-t UCL	3.539
Anderson-Darling 5% Critical Value	0.76	95% Hall's Bootstrap UCL	6.27
Kolmogorov-Smirnov Test Statistic	0.203	95% Percentile Bootstrap UCL	3.161
Kolmogorov-Smirnov 5% Critical Value	0.168	95% BCA Bootstrap UCL	3.321
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	4.26
		97.5% Chebyshev(Mean, Sd) UCL	5.029
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	6.54
95% Approximate Gamma UCL	3.218		
95% Adjusted Gamma UCL	3.27		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	4.26

Lead

General Statistics			
Number of Valid Samples	25	Number of Unique Samples	17
Number of Missing Values	39		
Raw Statistics		Log-transformed Statistics	
Minimum	1	Minimum of Log Data	0
Maximum	68	Maximum of Log Data	4.22
Mean	14.56	Mean of log Data	2.266
Median	9	SD of log Data	0.96
SD	14.67		
Coefficient of Variation	1.008		
Skewness	2.316		

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.76	Shapiro Wilk Test Statistic	0.984
Shapiro Wilk Critical Value	0.918	Shapiro Wilk Critical Value	0.918
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	19.58	95% H-UCL	24.75
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	28.97
95% Adjusted-CLT UCL	20.84	97.5% Chebyshev (MVUE) UCL	35.06
95% Modified-t UCL	19.81	99% Chebyshev (MVUE) UCL	47.02

Gamma Distribution Test						Data Distribution					
k star (bias corrected)					1.219	Data appear Gamma Distributed at 5% Significance Level					
Theta Star					11.95						
nu star					60.94						
Approximate Chi Square Value (.05)					43.99	Nonparametric Statistics					
Adjusted Level of Significance					0.0395	95% CLT UCL					19.39
Adjusted Chi Square Value					43.01	95% Jackknife UCL					19.58
						95% Standard Bootstrap UCL					19.41
Anderson-Darling Test Statistic					0.34	95% Bootstrap-t UCL					22.8
Anderson-Darling 5% Critical Value					0.765	95% Hall's Bootstrap UCL					41.25
Kolmogorov-Smirnov Test Statistic					0.107	95% Percentile Bootstrap UCL					19.72
Kolmogorov-Smirnov 5% Critical Value					0.178	95% BCA Bootstrap UCL					20.8
Data appear Gamma Distributed at 5% Significance Level						95% Chebyshev(Mean, Sd) UCL					27.35
						97.5% Chebyshev(Mean, Sd) UCL					32.88
Assuming Gamma Distribution						99% Chebyshev(Mean, Sd) UCL					43.76
95% Approximate Gamma UCL					20.17						
95% Adjusted Gamma UCL					20.63						
Potential UCL to Use						Use 95% Approximate Gamma UCL					20.17

Zinc

General Statistics			
Number of Valid Samples	24	Number of Unique Samples	15
Number of Missing Values	40		

Raw Statistics		Log-transformed Statistics	
Minimum	5	Minimum of Log Data	1.609
Maximum	47	Maximum of Log Data	3.85
Mean	20.25	Mean of log Data	2.816
Median	15.5	SD of log Data	0.635
SD	13.04		
Coefficient of Variation	0.644		
Skewness	0.976		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.856	Shapiro Wilk Test Statistic	0.946
Shapiro Wilk Critical Value	0.916	Shapiro Wilk Critical Value	0.916
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	24.81	95% H-UCL	26.98
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	32.38
95% Adjusted-CLT UCL	25.19	97.5% Chebyshev (MVUE) UCL	37.63
95% Modified-t UCL	24.9	99% Chebyshev (MVUE) UCL	47.95

Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.441	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	8.296		
nu star	117.2		
Approximate Chi Square Value (.05)	93.18	Nonparametric Statistics	
Adjusted Level of Significance	0.0392	95% CLT UCL	24.63

Adjusted Chi Square Value	91.67	95% Jackknife UCL	24.81
		95% Standard Bootstrap UCL	24.48
Anderson-Darling Test Statistic	0.679	95% Bootstrap-t UCL	25.73
Anderson-Darling 5% Critical Value	0.752	95% Hall's Bootstrap UCL	25.13
Kolmogorov-Smirnov Test Statistic	0.181	95% Percentile Bootstrap UCL	24.54
Kolmogorov-Smirnov 5% Critical Value	0.179	95% BCA Bootstrap UCL	24.92
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	31.85
		97.5% Chebyshev(Mean, Sd) UCL	36.87
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	46.73
95% Approximate Gamma UCL	25.46		
95% Adjusted Gamma UCL	25.88		
Potential UCL to Use		Use 95% Approximate Gamma UCL	25.46

Mercury

General Statistics			
Number of Valid Samples	64	Number of Unique Samples	13
Raw Statistics		**Log-transformed Statistics**	
Minimum	0.025	Minimum of Log Data	-3.689
Maximum	0.23	Maximum of Log Data	-1.47
Mean	0.0704	Mean of log Data	-2.818
Median	0.065	SD of log Data	0.586
SD	0.0423		
Coefficient of Variation	0.602		
Skewness	1.585		

Relevant UCL Statistics			
Normal Distribution Test		**Lognormal Distribution Test**	
Lilliefors Test Statistic	0.16	Lilliefors Test Statistic	0.166
Lilliefors Critical Value	0.111	Lilliefors Critical Value	0.111
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	0.0792	95% H-UCL	0.0817
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0949
95% Adjusted-CLT UCL	0.0802	97.5% Chebyshev (MVUE) UCL	0.105
95% Modified-t UCL	0.0794	99% Chebyshev (MVUE) UCL	0.126
Gamma Distribution Test		**Data Distribution**	
k star (bias corrected)	3.057	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.023		
nu star	391.2		
Approximate Chi Square Value (.05)	346.4	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0463	95% CLT UCL	0.0791
Adjusted Chi Square Value	345.4	95% Jackknife UCL	0.0792
		95% Standard Bootstrap UCL	0.0788
Anderson-Darling Test Statistic	1.467	95% Bootstrap-t UCL	0.0807
Anderson-Darling 5% Critical Value	0.757	95% Hall's Bootstrap UCL	0.0812
Kolmogorov-Smirnov Test Statistic	0.151	95% Percentile Bootstrap UCL	0.0794
Kolmogorov-Smirnov 5% Critical Value	0.112	95% BCA Bootstrap UCL	0.0799
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0935
		97.5% Chebyshev(Mean, Sd) UCL	0.103

Assuming Gamma Distribution									99% Chebyshev(Mean, Sd) UCL		0.123
95% Approximate Gamma UCL					0.0795						
95% Adjusted Gamma UCL					0.0797						
Potential UCL to Use									Use 95% Chebyshev (Mean, Sd) UCL		0.0935

Appendix A3

NATA Certified Analytical Results

LabMark
ENVIRONMENTAL LABORATORIES

CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

FINAL CERTIFICATE OF ANALYSIS - ENVIRONMENTAL DIVISION

Laboratory Report No:	E042993
Client Name:	David Lane Associates
Client Reference:	Coffs Harbour
Contact Name:	Jay Coburn
Chain of Custody No:	ns
Sample Matrix:	WATER

Cover Page 1 of 3
plus Sample Results

Date Received: 29/05/2009
Date Reported: 01/06/2009

This Final Certificate of Analysis consists of sample results, DQI's, method descriptions, laboratory definitions, and internationally recognised NATA accreditation and endorsement. The DQO compliance relates specifically to QA/QC results as performed as part of the sample analysis, and may provide an indication of sample result quality. Transfer of report ownership from Labmark to the client shall only occur once full & final payment has been settled and verified. All report copies may be retracted where full payment has not occured within the agreed settlement period.

QUALITY ASSURANCE CRITERIA

Accuracy:	matrix spike:	1 in first 5-20, then 1 every 20 samples
	lcs, crm, method:	1 per analytical batch
	surrogate spike:	addition per target organic method
Precision:	laboratory duplicate:	1 in first 5-10, then 1 every 10 samples
	laboratory triplicate:	re-extracted & reported when duplicate RPD values exceed acceptance criteria
Holding Times:	soils, waters:	Refer to LabMark Preservation & THT table VOC's 14 days water / soil VAC's 7 days water or 14 days acidified VAC's 14 days soil SVOC's 7 days water, 14 days soil Pesticides 7 days water, 14 days soil Metals 6 months general elements Mercury 28 days
Confirmation:	target organic analysis:	GC/MS, or confirmatory column
Sensitivity:	EQL:	Typically 2-5 x Method Detection Limit (MDL)

QUALITY CONTROL GLOBAL ACCEPTANCE CRITERIA (GAC)

Accuracy:	spike, lcs, crm surrogate:	general analytes 70% - 130% recovery phenol analytes 50% - 130% recovery organophosphorous pesticide analytes 60% - 130% recovery phenoxy acid herbicides, organotin 50% - 130% recovery
	anion/cation bal:	+/- 10% (0-3 meq/l), +/- 5% (>3 meq/l)
Precision:	method blank:	not detected >95% of the reported EQL
	duplicate lab RPD (metals):	0-30% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)
	duplicate lab RPD:	0-50% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)

QUALITY CONTROL ANALYTE SPECIFIC ACCEPTANCE CRITERIA (ASAC)

Accuracy:	spike, lcs, crm surrogate:	analyte specific recovery data <3xsd of historical mean
Uncertainty:	spike, lcs:	measurement calculated from historical analyte specific control charts

RESULT ANNOTATION

Data Quality Objective	s:	matrix spike recovery	p:	pending	bcs: batch specific lcs
Data Quality Indicator	d:	laboratory duplicate	lcs:	laboratory control sample	bmb: batch specific mb
Estimated Quantitation Limit	t:	laboratory triplicate	crm:	certified reference material	
not applicable	r:	RPD relative % difference	mb:	method blank	

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LabMark
ENVIRONMENTAL LABORATORIES

CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

Environmental Laboratory Industry Group
Foundation Member

Laboratory Report: E042993

NEPC GUIDELINE COMPLIANCE - DQO

1. GENERAL

A. Results relate specifically to samples as received. Sample results are not corrected for matrix spike, lcs, or surrogate recovery data.

B. EQL's are matrix dependant and may be increased due to sample dilution or matrix interference.

C. Laboratory QA/QC samples are specific to this project.

D. Inter-laboratory proficiency results are available upon request. NATA accreditation details available at www.nata.asn.au.

E. VOC spikes & surrogates added to samples during extraction, SVOC spikes & surrogates added prior to extraction.

F. Recovery data outside GAC limits shall be investigated and compared to ASAC (historical mean +/- 3sd). If recovery data <20%, then the relevant results for that compound are considered not reliable.

G. Recovery data (ms, surrogate, crm, lcs) outside ASAC limits shall initiate an investigative action. Anomolous QC data is examined in conjunction with other QC samples and a final decision whether to accept or reject results is provided by the professional judgement of the senior analyst. The USEPA-CLP National Functional Guidelines are referred to for specific recommendations.

H. Extraction (preparation) date refers to the date that sample preparation was initiated. Note that certain methods not requiring sample preparation (eg. VOCs in water, etc) may report a common extraction and analysis date.

I. LabMark shall maintain an official copy of this Certificate of Analysis for all tracable reference purposes.

2. CHAIN OF CUSTODY (COC) & SAMPLE RECEIPT NOTICE (SRN) REQUIREMENTS

A. SRN issued to client upon sample receipt & login verification.

B. Preservation & sampling date details specified on COC and SRN, unless noted.

C. Sample Integrity & Validated Time of Sample Receipt (VTSR) Holding Times verified (preservation may extend holding time, refer to preservation chart).

3. NATA ACCREDITED METHODS

A. NATA accreditation held for each in-house method and sample matrix type reported, unless noted below (Refer to subcontracted test reports for NATA accreditation status).

B. NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA / APHA documents. Corporate Accreditation No. 13542.

C. Subcontracted analyses: Refer to Sample Receipt Notice and additional DQO comments.

Environmental Laboratory Industry Group
Foundation Member

Laboratory Report: E042993

4. QA/QC FREQUENCY COMPLIANCE TABLE SPECIFIC TO THIS REPORT

Matrix: **WATER**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
1	BTEX by P&T	2	0	0%	0	0	0%
1	Volatile TPH by P&T (vTPH)	2	0	0%	0	0	0%

GLOSSARY:

#d	number of discrete duplicate extractions/analyses performed.
%d-ratio	NEPC guideline for laboratory duplicates is 1 in 10 samples (min 10%).
#t	number of triplicate extractions/analyses performed.
#s	number of spiked samples analysed.
%s-ratio	USEPA guideline for laboratory matrix spikes is 1 in 20 samples (min 5%).

5. ADDITIONAL COMMENTS SPECIFIC TO THIS REPORT

A. All tests were conducted by LabMark Environmental Sydney, NATA accreditation No. 13542, unless indicated below.
B. Lab Ident 210670 reported recovery of 63% for vTPH analysis.

Laboratory QA/QC data shall relate specifically to this report, and may provide an indication of site specific sample result quality. LabMark DOES NOT report NON-RELEVANT BATCH QA/QC data. Acceptance of this self assessment certificate does not preclude any requirement for a QA/QC review by a accredited contaminated site EPA auditor, when and wherever necessary. Laboratory QA/QC self assessment references available upon request.

LabMark
ENVIRONMENTAL LABORATORIES

Laboratory Report No: E042993
Client Name: David Lane Associates
Contact Name: Jay Coburn
Client Reference: Coffs Harbour DL1800

plus cover page
Date: 01/06/09
This report supercedes reports issued on: N/A

Final
Certificate
of Analysis

Laboratory Identification		**210670**	**210671**	**lcs**	**mb**						
Sample Identification		TS	TB	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		20/5/09	20/5/09	--	--						
Laboratory Extraction (Preparation) Date		1/6/09	1/6/09	1/6/09	1/6/09						
Laboratory Analysis Date		1/6/09	1/6/09	1/6/09	1/6/09						
Method : E029.1/E016.1											
BTEX by P&T	**EQL**										
Benzene	1	70%	<1	93%	<1						
Toluene	1	70%	<1	93%	<1						
Ethylbenzene	1	70%	<1	90%	<1						
meta- & para-Xylene	2	70%	<2	95%	<2						
ortho-Xylene	1	71%	<1	96%	<1						
Total Xylene	--	--	--	--	--						
4-BFB (Surr @ 50ug/l)	--	*93%*	*86%*	*95%*	*92%*						
Method : E029.1/E016.1											
Volatile TPH by P&T (vTPH)	**EQL**										
C6-C9	50	63%	<50	109%	<50						

Results expressed in ug/l unless otherwise specified

Comments: - Results for Trip Spike sample are expressed in % recovery.

E029.1/E016.1: Direct injection into P&T/GC/FID/MSD.
E029.1/E016.1: Direct injection into P&T/GC/MSD.

LabMark
ENVIRONMENTAL LABORATORIES

Report Date : 29/05/2009
Report Time : 3:36:30PM

Sample **Receipt** Notice (SRN) for **E042993**

Quality, Service, Support

Client Details		Laboratory Reference Information	
		Please have this information ready when contacting Labmark.	
Client Name:	David Lane Associates	**Laboratory Report:**	**E042993**
Client Phone:	02 4938 3800	**Quotation Number:**	- Not provided, standard prices apply
Client Fax:	02 4938 3811	**Laboratory Address:**	Unit 1, 8 Leighton Pl. Asquith NSW 2077
Contact Name:	Jay Coburn		
Contact Email:	dlassociates@bigpond.com	**Phone:**	61 2 9476 6533
Client Address:	"Ayrfield" Lot 18 Old North Road North Rothbury NSW 2335	**Fax:**	61 2 9476 8219
		Sample Receipt Contact:	Ros Schacht
Project Name:	Coffs Harbour	**Email:**	Ros.Schacht@labmark.com.au
Project Number:	DL1800	**Reporting Contact:**	Leanne Boag
CoC Serial Number:	- Not provided -	**Email:**	leanne.boag@labmark.com.au
Purchase Order:	- Not provided -		
Surcharge:	100% for 1 working day TAT (pro-rata for completed results by 6:30pm on due date)		
Sample Matrix:	WATER		
Date Sampled (earliest date):	20/05/2009	**NATA Accreditation:**	13542
Date Samples Received:	29/05/2009	**TGA GMP License:**	185-336 (Sydney)
Date Sample Receipt Notice issued:	29/05/2009	**APVMA License:**	6105 (Sydney)
Date Preliminary Report Due:	01/06/2009	**AQIS Approval:**	NO356 (Sydney)
Client TAT Request Date:	01/06/2009	**AQIS Entry Permit:**	200521534 (Sydney)

Reporting Requirements: Electronic Data Download required: No

Invoice Number: 09EA4207

Sample Condition: COC received with samples. Report number and lab ID's defined on COC.
Samples received in good order .
Samples received with cooling media: Crushed ice .
Samples received chilled.
Security seals not required. Direct Labmark's custody taken .
Sample container & chemical preservation suitable .

Comments:

Holding Times: Date received allows for sufficient time to meet Technical Holding Times.

Preservation: Chemical preservation of samples satisfactory for requested analytes.

Important Notes:

LabMark shall responsibly dispose of spent customer soil and water samples which includes the disintegration of the sample label. A sample disposal fee of $1.00 is applicable on all samples received by the laboratory regardless of whether they have undergone analytical testing. Sample disposal of environmental samples shall be 31 days (water) and 3 months (soil, HN03 preserved samples) after laboratory receipt, unless otherwise requested in writing by the client. Samples requested to be held in non-refrigerated storage shall incur $5.00/ sample/ 3 months. Additional refrigerated storage shall incur $30/ sample/ 3 months. Combination prices apply only if requested. Transfer of report ownership from LabMark to the client shall occur once full and final payment has been settled and verified. All report copies may be retracted where full payment does not occur within the agreed settlement period.

Analysis comments:

Subcontracted Analyses:

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

LabMark
ENVIRONMENTAL LABORATORIES

Report Date : 29/05/2009
Report Time : 3:36:30PM

Sample **Receipt** Notice (SRN) for **E042993**

Quality, Service, Support

The table below represents LabMark's understanding and interpretation of the customer supplied sample COC request (refer to SRN comments section on first page for external subcontracting method details). Please confirm that your COC request has been entered correctly. Due to THT and TAT requirements, testing shall commence immediately as per this table, unless the customer intervenes with a correction prior to testing.

GRID REVIEW TABLE

No.	Date	Depth	Client Sample ID	Requested Analysis: BTEX by P&T	PREP Not Reported	Volatile TPH by P&T (vTPH)																
210670	20/05		TS	●	●	●																
210671	20/05		TB	●	●	●																
			Totals:	2	2	2																

'PREP Not Reported' refers to an internal laboratory instruction - client confirmation of this parameter is not required.

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

CHAIN OF CUSTODY

PAGE 1 OF 1

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.10: Date Issued 11/10/2006

LABMARK — NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Moray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
(DB): 0409449684, (PW): 0439390209
ros.schacht@labmark.com.au
paul.woodward@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals refer to SAFETY label on bottle.

Company & Address: DLA — Tel:
Project Manager: DL1800 - COFFS — Sampler: PLA — Fx:
Project Name: JAY COBURN — Date Required: 24HR
Project Type (eg. Service Station): — Project No: — Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

	YES (tick)
1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)	
2. Do you require sediment present in waters to be included in organic/ inorganic extractions?	
3. Do you require additional QA/QC reported where sample batches submitted are < 10 samples? (Fee Applies)	
4. Do you require additional EQA or batch specific LCS/ MB results every 20 samples? (Fee Applies)	
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?	
6. Do you wish chromatograms to be supplied? (Additional fee applies).	
7. Electronic data transfer (circle: fax .xls .csv .pdf). Please specify.	

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Nat. = unpreserved, G=glass, P=plastic): Soil (G) Nat. Orange	0.5-1L (G) Nat. Orange	43ml VOA (G) Nat. Orange	43ml VOA (G) HCl Maroon	0.1-1L (P) H2SO4 Purple	0.1-1L (G) H2SO4 Purple	0.1-1L (P) Nat. Green	0.1-0.2L (P) HNO3 Rec Filtered YES/ NO	0.1-1L (P) NaOH , CdNO3 Blue	Other
	JS		20.5.09	x														x
	TB		20.5.09	x														x
Totals																		

Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14> A

BTEX + TPH (C6-9) PT-GC/FID/PID/orMS	Volatile Tests 125g: 2x43 ml	VHC PT-GC/MS	THM PT-GC/MS	MTBE PT-GC/MS	VAC PT-GC/MS	VOC PT-GC/MS	Semi- & Non-Volatile Tests 125g (max. 4 tests): 500 ml	PAH's GC/MS	Phenols GC/MS	Aromatic/ Aliphatic TPH GC/FID	(circle) OC, OP, PCB GC/ECD/FPD	SVOC GC/MS	Phenoxy Acid Herbicides GC/MS	Explosives HPLC	(circle) Metals* (dissolved / total)	Leach 250g: TCLP (specify test - other)	ZHE TCLP (specify test - other)	Nutrient Tests 125g (max. 4 tests) 0.1 - 1L (chemical groups): (circle) pH, EC	(circle) NH_3, TKN, N_{org}, TN	(circle) NO_x, NO_3^-, NO_2^-	(circle) TP, ortho-P, TKP	(circle) Cl^-, F^-, SO_4^{2-} (circle) soluble/total	(circle) Total Alk, Speciated Alk	(circle) Free CN, WAD, Total CN	Total Phenolics	Cations (circle) sol/total - Ca, Mg, Na, K	Other (eg. TCLP tests here)
x																											
x																											

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples):

Lab Report No. EQ2993

Security Seal Applied — YES/NO
Security Seal Serial #

Relinquished by (print): JAY COBURN — Signed: — Date: 29.5.09 — Received By: — Date: — Time:

Relinquished by (print): — Signed: — Date: — Received By: — Date: — Time:

LabMark
ENVIRONMENTAL LABORATORIES

Accreditation No. 13542

AQIS
AUSTRALIAN QUARANTINE AND INSPECTION SERVICE

SYDNEY License No. N0356.

Accredited for compliance with ISO/IEC 17025. The results of tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the APLAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

Quarantine Approved Premises criteria 5.1 for quarantine containment level 1 (QCI) facilities. Class five criteria cover premises utilised for research, analysis and testing of biological material, soil, animal, plant and human products.

CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

FINAL CERTIFICATE OF ANALYSIS - ENVIRONMENTAL DIVISION

Laboratory Report No:	E042911
Client Name:	David Lane Associates
Client Reference:	Coffs - Phase 2
Contact Name:	Jay Coburn
Chain of Custody No:	na
Sample Matrix:	SOIL

Cover Page 1 of 4
plus Sample Results

Date Received: 25/05/2009
Date Reported: 28/05/2009

This Final Certificate of Analysis consists of sample results, DQI's, method descriptions, laboratory definitions, and internationally recognised NATA accreditation and endorsement. The DQO compliance relates specifically to QA/QC results as performed as part of the sample analysis, and may provide an indication of sample result quality. Transfer of report ownership from Labmark to the client shall only occur once full & final payment has been settled and verified. All report copies may be retracted where full payment has not occured within the agreed settlement period.

QUALITY ASSURANCE CRITERIA

Accuracy:	matrix spike:	1 in first 5-20, then 1 every 20 samples
	lcs, crm, method:	1 per analytical batch
	surrogate spike:	addition per target organic method
Precision:	laboratory duplicate:	1 in first 5-10, then 1 every 10 samples
	laboratory triplicate:	re-extracted & reported when duplicate RPD values exceed acceptance criteria
Holding Times:	soils, waters:	Refer to LabMark Preservation & THT table VOC's 14 days water / soil VAC's 7 days water or 14 days acidified VAC's 14 days soil SVOC's 7 days water, 14 days soil Pesticides 7 days water, 14 days soil Metals 6 months general elements Mercury 28 days
Confirmation:	target organic analysis:	GC/MS, or confirmatory column
Sensitivity:	EQL:	Typically 2-5 x Method Detection Limit (MDL)

QUALITY CONTROL GLOBAL ACCEPTANCE CRITERIA (GAC)

Accuracy:	spike, lcs, crm surrogate:	general analytes 70% - 130% recovery phenol analytes 50% - 130% recovery organophosphorous pesticide analytes 60% - 130% recovery phenoxy acid herbicides, organotin 50% - 130% recovery
	anion/cation bal:	+/- 10% (0-3 meq/l), +/- 5% (>3 meq/l)
Precision:	method blank:	not detected >95% of the reported EQL
	duplicate lab RPD (metals):	0-30% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)
	duplicate lab RPD:	0-50% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)

QUALITY CONTROL ANALYTE SPECIFIC ACCEPTANCE CRITERIA (ASAC)

Accuracy:	spike, lcs, crm surrogate:	analyte specific recovery data <3xsd of historical mean
Uncertainty:	spike, lcs:	measurement calculated from historical analyte specific control charts

RESULT ANNOTATION

Data Quality Objective	s:	matrix spike recovery	p:	pending	bcs: batch specific lcs
Data Quality Indicator	d:	laboratory duplicate	lcs:	laboratory control sample	bmb: batch specific mb
Estimated Quantitation Limit	t:	laboratory triplicate	crm:	certified reference material	
not applicable	r:	RPD relative % difference	mb:	method blank	

David Burns
Quality Control (Report signatory)
david.burns@labmark.com.au

Geoff Weir
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Simon Mills
Authorising Chemist (NATA signatory)
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LabMark
ENVIRONMENTAL LABORATORIES

CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

Environmental Laboratory Industry Group
Foundation Member

Laboratory Report: E042911

NEPC GUIDELINE COMPLIANCE - DQO

1. GENERAL

A. Results relate specifically to samples as received. Sample results are not corrected for matrix spike, lcs, or surrogate recovery data.

B. EQL's are matrix dependant and may be increased due to sample dilution or matrix interference.

C. Laboratory QA/QC samples are specific to this project.

D. Inter-laboratory proficiency results are available upon request. NATA accreditation details available at www.nata.asn.au.

E. VOC spikes & surrogates added to samples during extraction, SVOC spikes & surrogates added prior to extraction.

F. Recovery data outside GAC limits shall be investigated and compared to ASAC (historical mean +/- 3sd). If recovery data <20%, then the relevant results for that compound are considered not reliable.

G. Recovery data (ms, surrogate, crm, lcs) outside ASAC limits shall initiate an investigative action. Anomolous QC data is examined in conjunction with other QC samples and a final decision whether to accept or reject results is provided by the professional judgement of the senior analyst. The USEPA-CLP National Functional Guidelines are referred to for specific recommendations.

H. Extraction (preparation) date refers to the date that sample preparation was initiated. Note that certain methods not requiring sample preparation (eg. VOCs in water, etc) may report a common extraction and analysis date.

I. LabMark shall maintain an official copy of this Certificate of Analysis for all tracable reference purposes.

2. CHAIN OF CUSTODY (COC) & SAMPLE RECEIPT NOTICE (SRN) REQUIREMENTS

A. SRN issued to client upon sample receipt & login verification.

B. Preservation & sampling date details specified on COC and SRN, unless noted.

C. Sample Integrity & Validated Time of Sample Receipt (VTSR) Holding Times verified (preservation may extend holding time, refer to preservation chart).

3. NATA ACCREDITED METHODS

A. NATA accreditation held for each in-house method and sample matrix type reported, unless noted below (Refer to subcontracted test reports for NATA accreditation status).

B. NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA / APHA documents. Corporate Accreditation No. 13542.

C. Subcontracted analyses: Refer to Sample Receipt Notice and additional DQO comments.

4. QA/QC FREQUENCY COMPLIANCE TABLE SPECIFIC TO THIS REPORT

Matrix: **SOIL**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
1	BTEX by P&T	13	2	15%	0	1	8%
1	Volatile TPH by P&T (vTPH)	13	2	15%	0	1	8%
3	Petroleum Hydrocarbons (TPH)	13	2	15%	0	1	8%
5	Polyaromatic Hydrocarbons (PAH)	28	3	11%	0	2	7%
9	Organochlorine Pesticides (OC)	44	5	11%	0	3	7%
15	Organophosphorus Pesticides (OP)	14	2	14%	0	1	7%
18	Polychlorinated Biphenyls (PCB)	14	2	14%	0	1	7%
21	Acid extractable metals (M7)	61	7	11%	1	4	7%
30	Acid extractable metals - mercury	61	7	11%	0	4	7%
35	Moisture	63	--	--	--	--	--

GLOSSARY:

#d	number of discrete duplicate extractions/analyses performed.
%d-ratio	NEPC guideline for laboratory duplicates is 1 in 10 samples (min 10%).
#t	number of triplicate extractions/analyses performed.
#s	number of spiked samples analysed.
%s-ratio	USEPA guideline for laboratory matrix spikes is 1 in 20 samples (min 5%).

Environmental Laboratory Industry Group
Foundation Member

Laboratory Report: E042911

5. ADDITIONAL COMMENTS SPECIFIC TO THIS REPORT

A. All tests were conducted by LabMark Environmental Sydney, NATA accreditation No. 13542, unless indicated below.
B. Metals; Lab #209953d reported RPD of 54% and 99% for copper and lead respectively, triplicate result issued.
C. Metals; Spike recoveries for azinc in sample 209921s at 62%, corresponding lcs recoveries at 102%.

Laboratory QA/QC data shall relate specifically to this report, and may provide an indication of site specific sample result quality. LabMark DOES NOT report NON-RELEVANT BATCH QA/QC data. Acceptance of this self assessment certificate does not preclude any requirement for a QA/QC review by a accredited contaminated site EPA auditor, when and wherever necessary. Laboratory QA/QC self assessment references available upon request.

LabMark
ENVIRONMENTAL LABORATORIES

Laboratory Report No: E042911
Client Name: David Lane Associates
Contact Name: Jay Coburn
Client Reference: Coffs - Phase 2 DL1800

plus cover page
Date: 28/05/09
This report supercedes reports issued on: N/A

Final
Certificate
of Analysis

Laboratory Identification		**209879**	**209880**	**209883**	**209884**	**209899**	**209900**	**209940**	**209941**	**209942**	**209949**
Sample Identification		C-2-1	C-2-1A	C-3-1	C-3-1A	C-11-1	C-11-1A	C-47-1	C-48-1	C-48-1A	C-55-1
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		19/5/09	19/5/09	19/5/09	19/5/09	19/5/09	19/5/09	20/5/09	20/5/09	20/5/09	20/5/09
Laboratory Extraction (Preparation) Date		26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09
Laboratory Analysis Date		26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09
Method : E002.2											
BTEX by P&T	**EQL**										
Benzene	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
meta- and para-Xylene	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
ortho-Xylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylene	--	--	--	--	--	--	--	--	--	--	--
CDFB (Surr @ 10mg/kg)	--	*87%*	*94%*	*92%*	*88%*	*91%*	*88%*	*88%*	*94%*	*91%*	*95%*
Method : E003.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E003.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID.
E002.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/PID/MSD.

Laboratory Identification		**209950**	**209953**	**209954**	**209899d**	**209899r**	**209953d**	**209953r**	**209900s**	**lcs**	**mb**
Sample Identification		C-55-1A	C-58-1	C-58-1A	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		20/5/09	20/5/09	20/5/09	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		26/5/09	26/5/09	26/5/09	26/5/09	--	26/5/09	--	26/5/09	26/5/09	26/5/09
Laboratory Analysis Date		26/5/09	26/5/09	26/5/09	26/5/09	--	26/5/09	--	26/5/09	26/5/09	26/5/09
Method : E002.2											
BTEX by P&T	**EQL**										
Benzene	0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	--	88%	92%	<0.2
Toluene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	92%	94%	<0.5
Ethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	86%	88%	<0.5
meta- and para-Xylene	1	<1	<1	<1	<1	--	<1	--	90%	92%	<1
ortho-Xylene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	89%	93%	<0.5
Total Xylene	--	--	--	--	--	--	--	--	--	--	--
CDFB (Surr @ 10mg/kg)	--	*95%*	*93%*	*89%*	*94%*	*3%*	*92%*	*1%*	*95%*	*104%*	*103%*
Method : E003.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	<10	<10	<10	<10	--	<10	--	92%	94%	<10

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E003.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID.
E002.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/PID/MSD.

Laboratory Identification		**209879**	**209880**	**209883**	**209884**	**209899**	**209900**	**209940**	**209941**	**209942**	**209949**
Sample Identification		C-2-1	C-2-1A	C-3-1	C-3-1A	C-11-1	C-11-1A	C-47-1	C-48-1	C-48-1A	C-55-1
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		19/5/09	19/5/09	19/5/09	19/5/09	19/5/09	19/5/09	20/5/09	20/5/09	20/5/09	20/5/09
Laboratory Extraction (Preparation) Date		26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09
Laboratory Analysis Date		26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09	26/5/09
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone/Hexane (10:45:45). Analysis by GC/FID.