





Properties

nearmap
currently clear changes
Showing: Sun 13 Sep 2015

Appendix E - Yarra Valley Water Records



Yarra Valley
Water

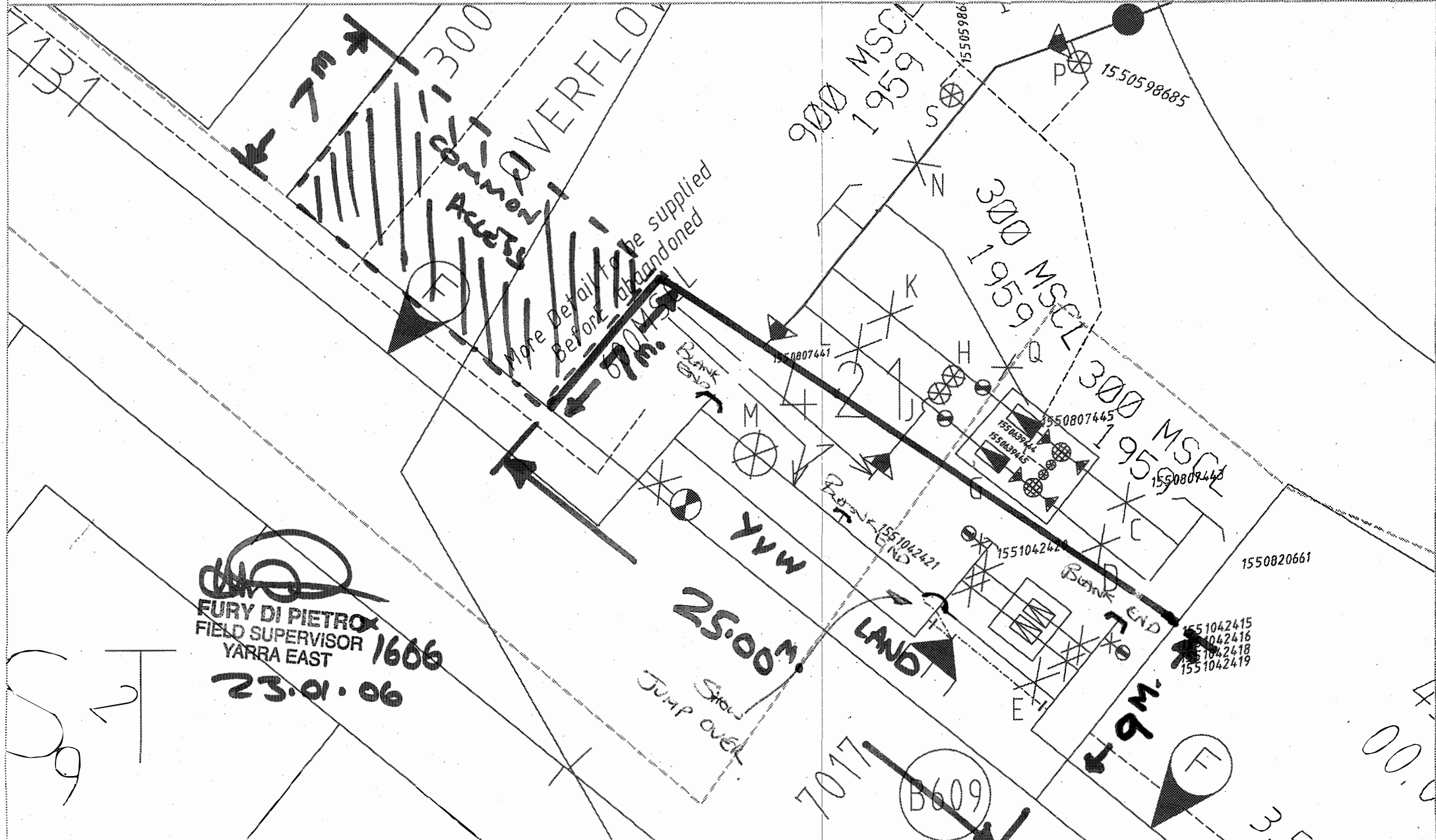
SCALE: 1:200

DATE: 24/01/2006 15:20

SERVICE PLAN SCREEN PLOT

(c) Yarra Valley Water Ltd 1996

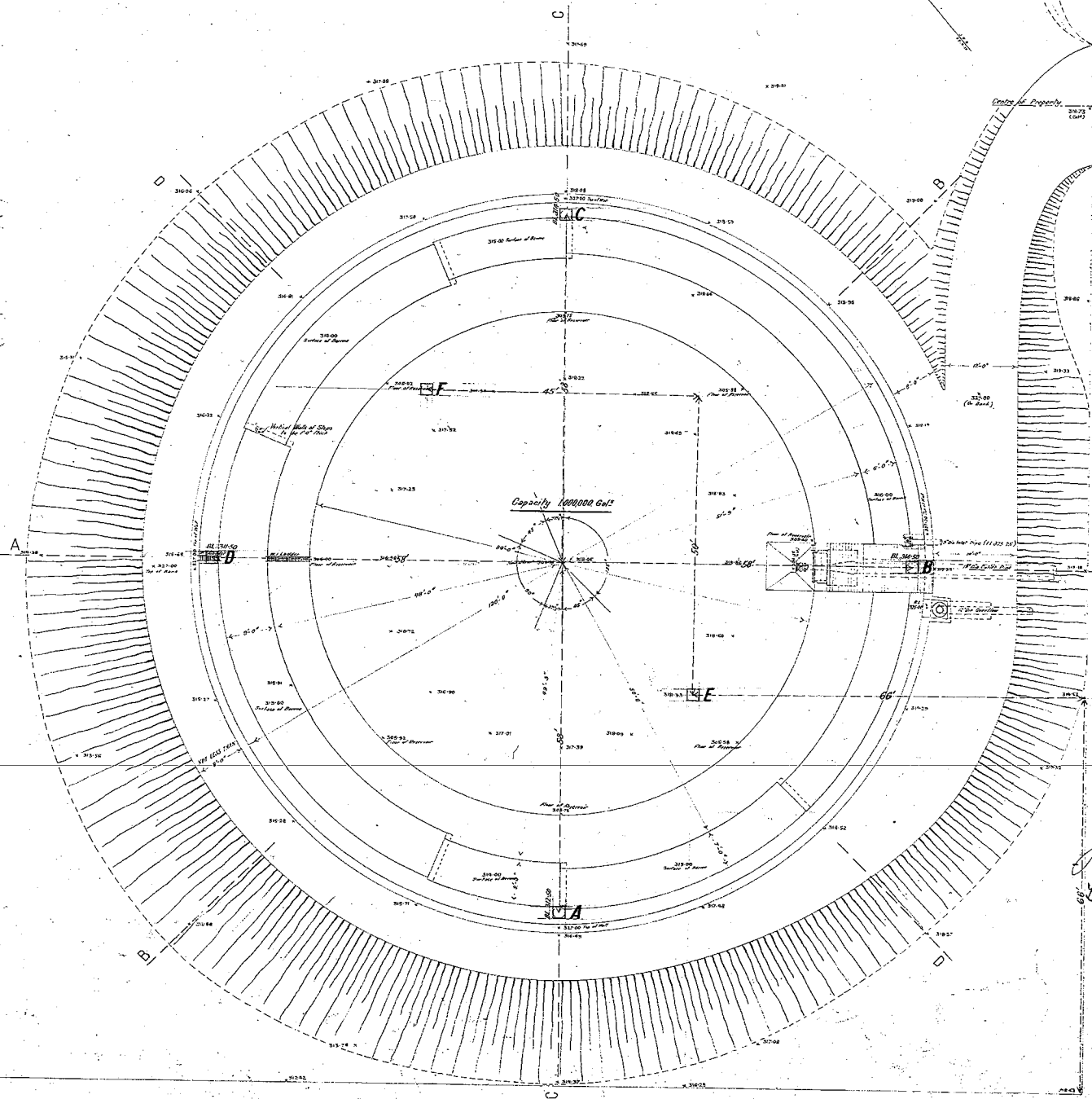
This plan is to be used for the location of Yarra Valley Water's assets only and is not to be used for any other purpose.



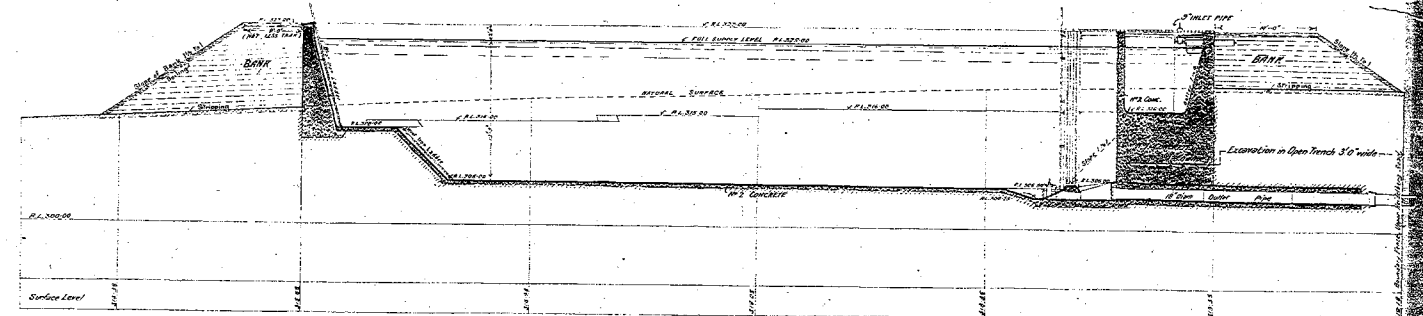
M.M.B.W.
HEIDELBERG RESERVOIR
Scale 8'-0" = 1'

Drawing No. 1

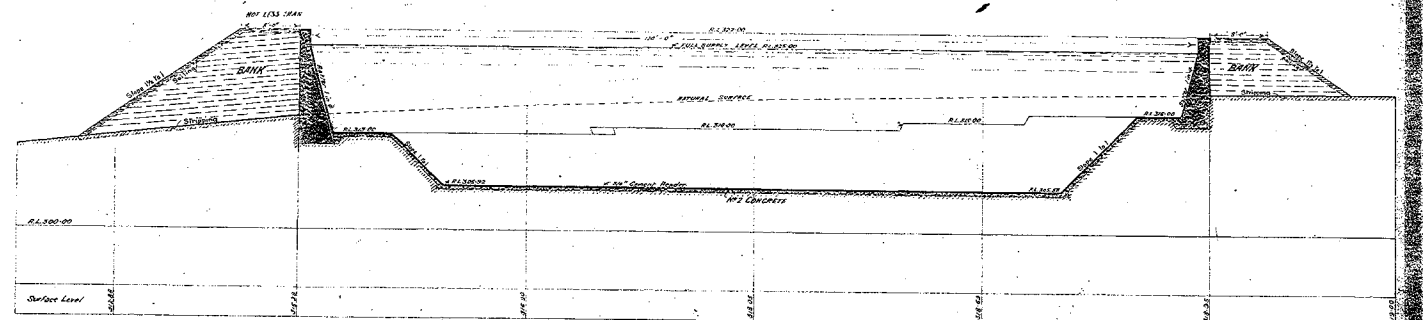
Plan of Reservoir



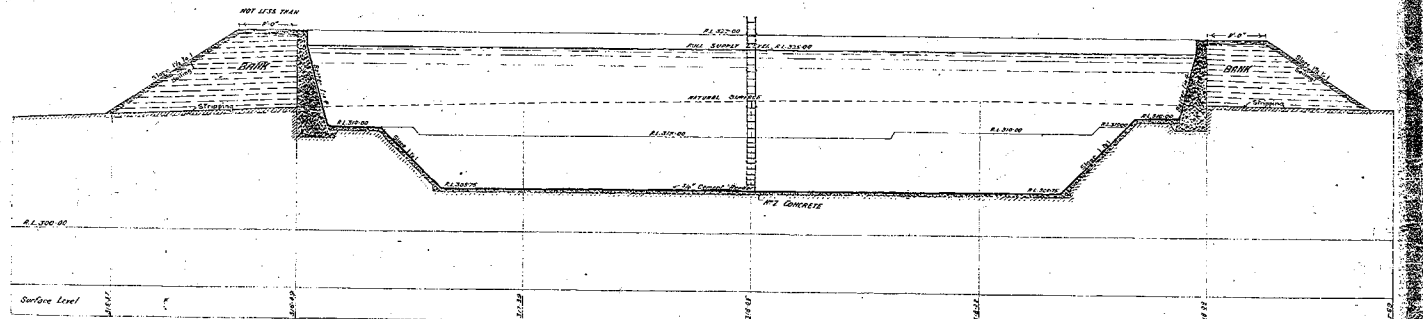
UPPER HEIDELBERG ROAD



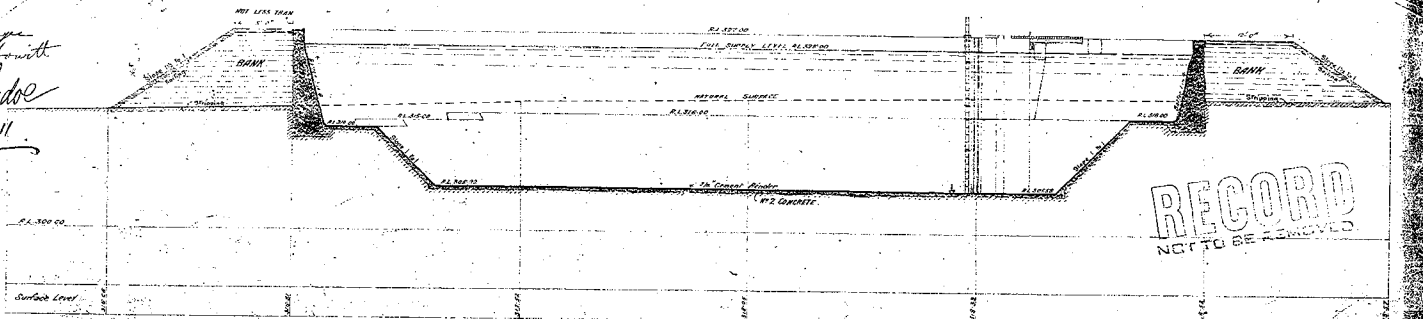
Section A-A



Section B-B



Section C-C



Section D-D

James George
Richard A. Howitt
James J. Burt
March 1911

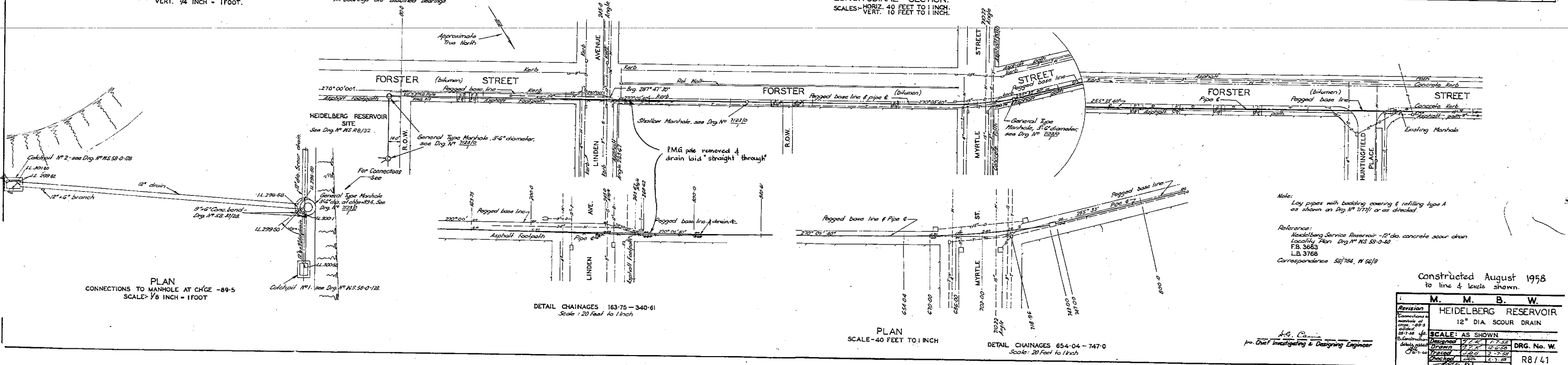
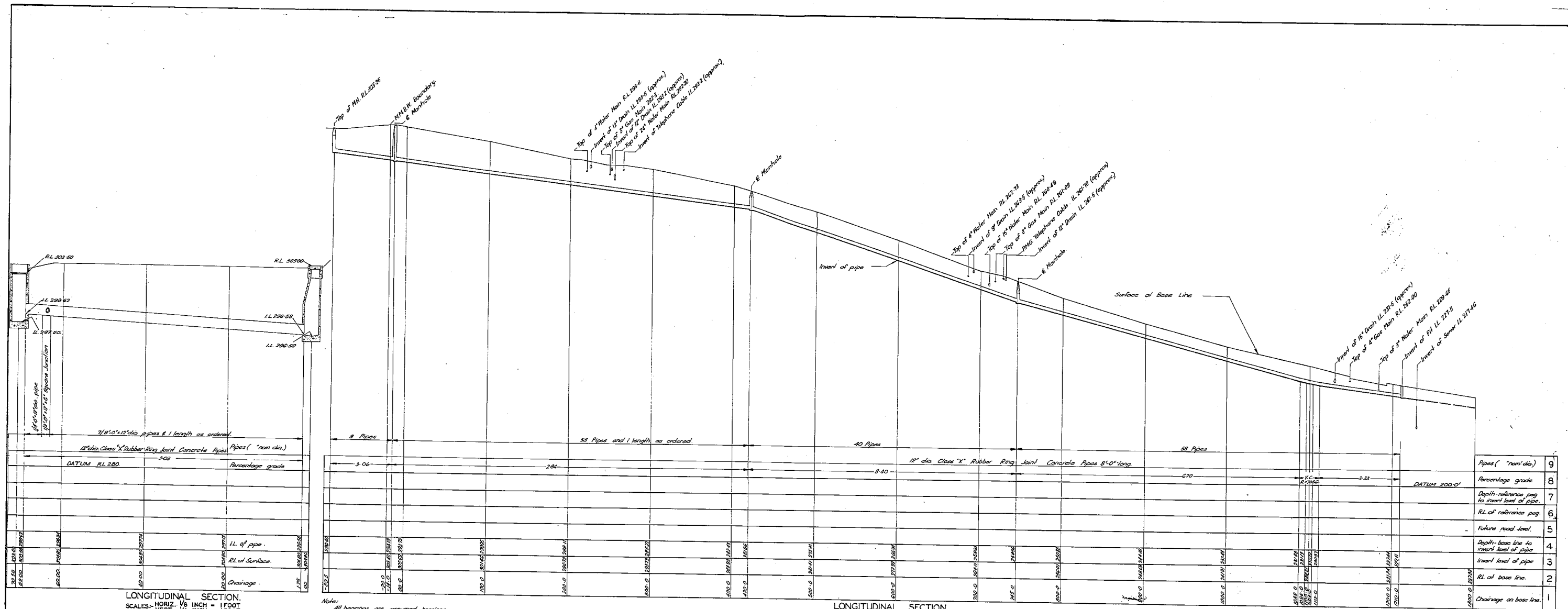
REMOVED FROM SERVICE
HISTORICAL
PLANNING
ONLY

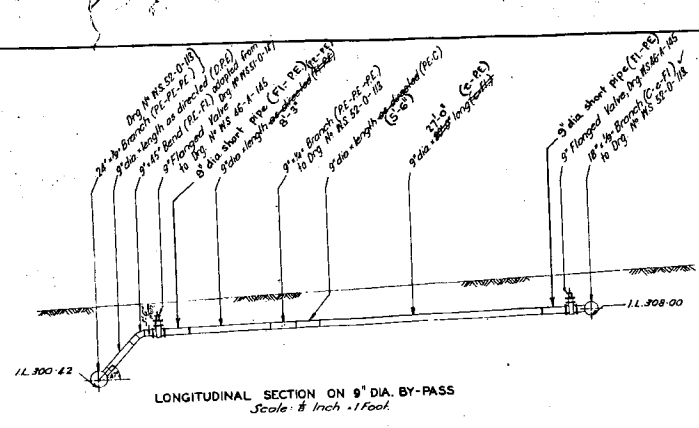
CONTRACTOR'S ROOM COPY.

Chas. E. Hall
Selling Engineer in Chief
11-3-11

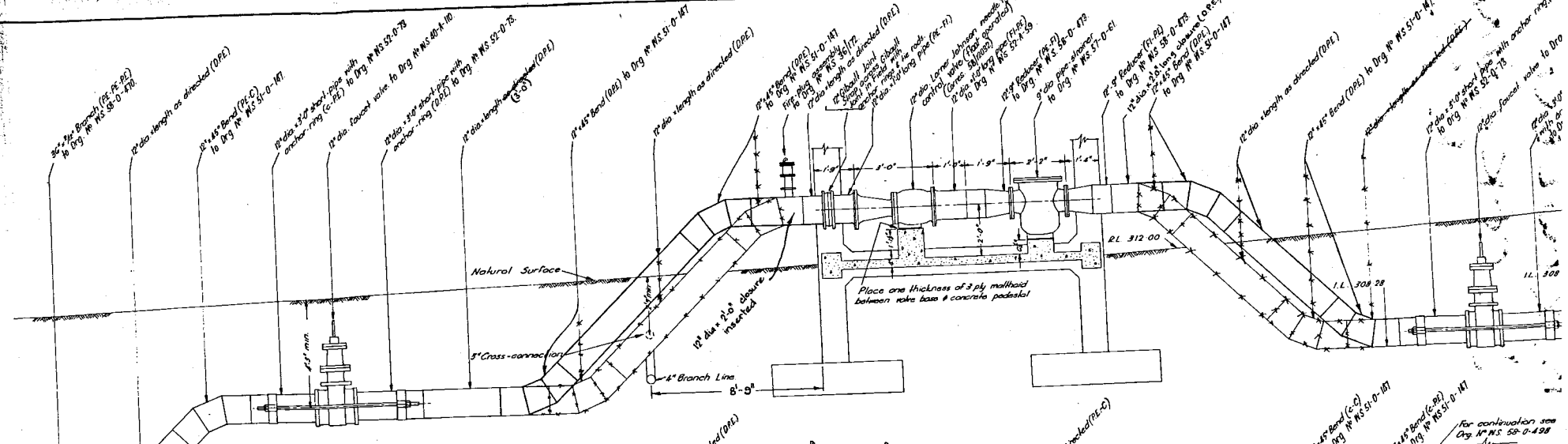
R 8/3

RECORD
NOT TO BE REMOVED

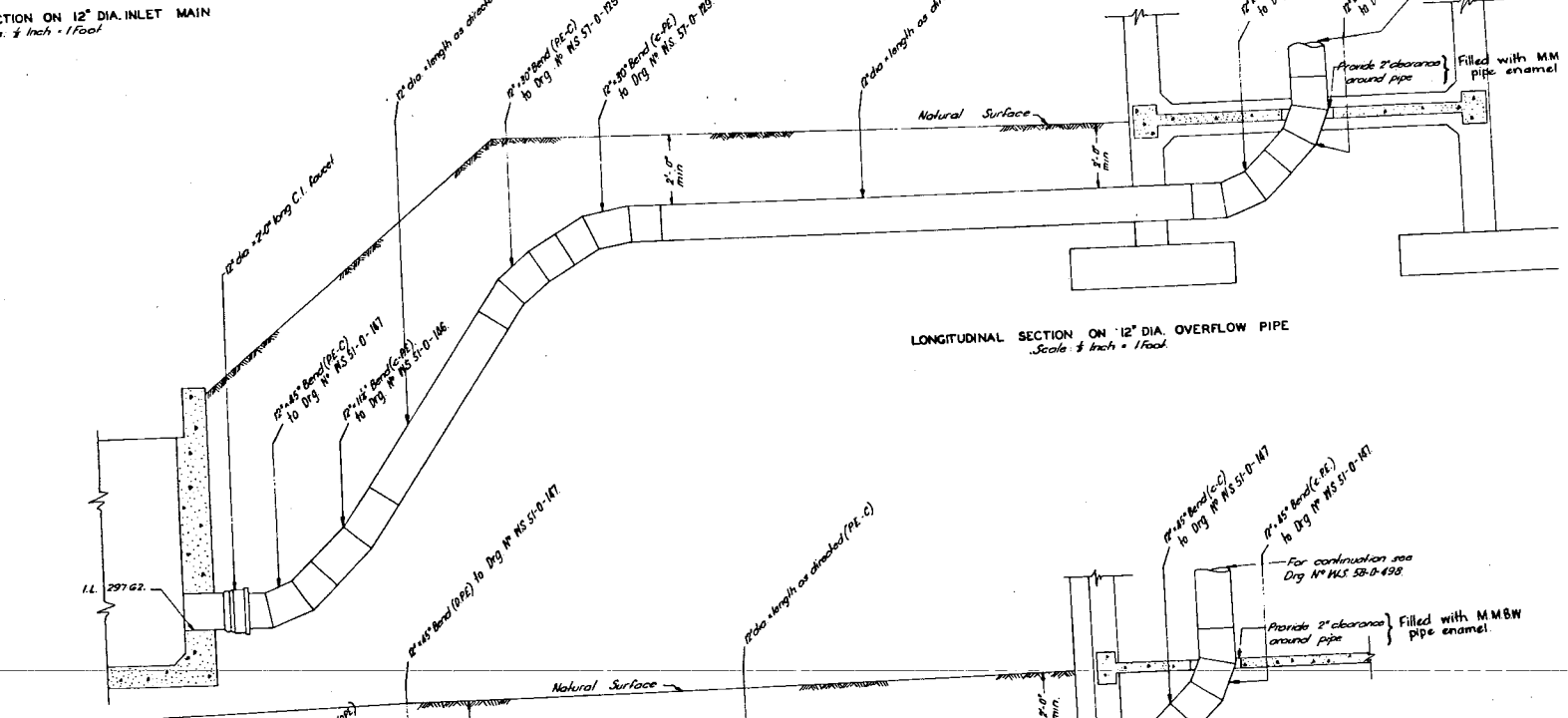




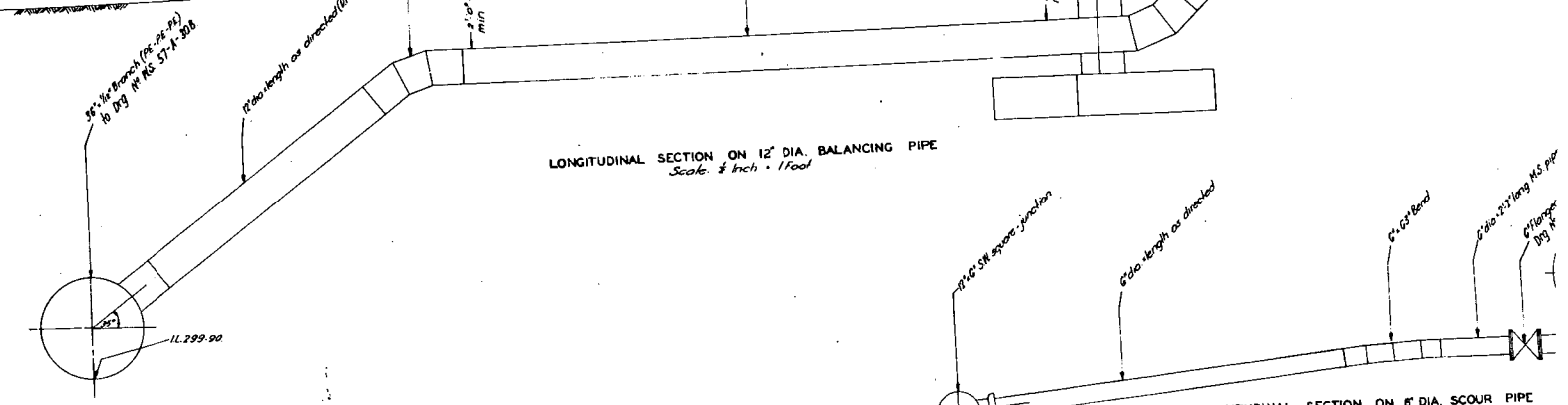
LONGITUDINAL SECTION ON 9" DIA. BY-PASS
Scale: 1/8" = 1' Foot



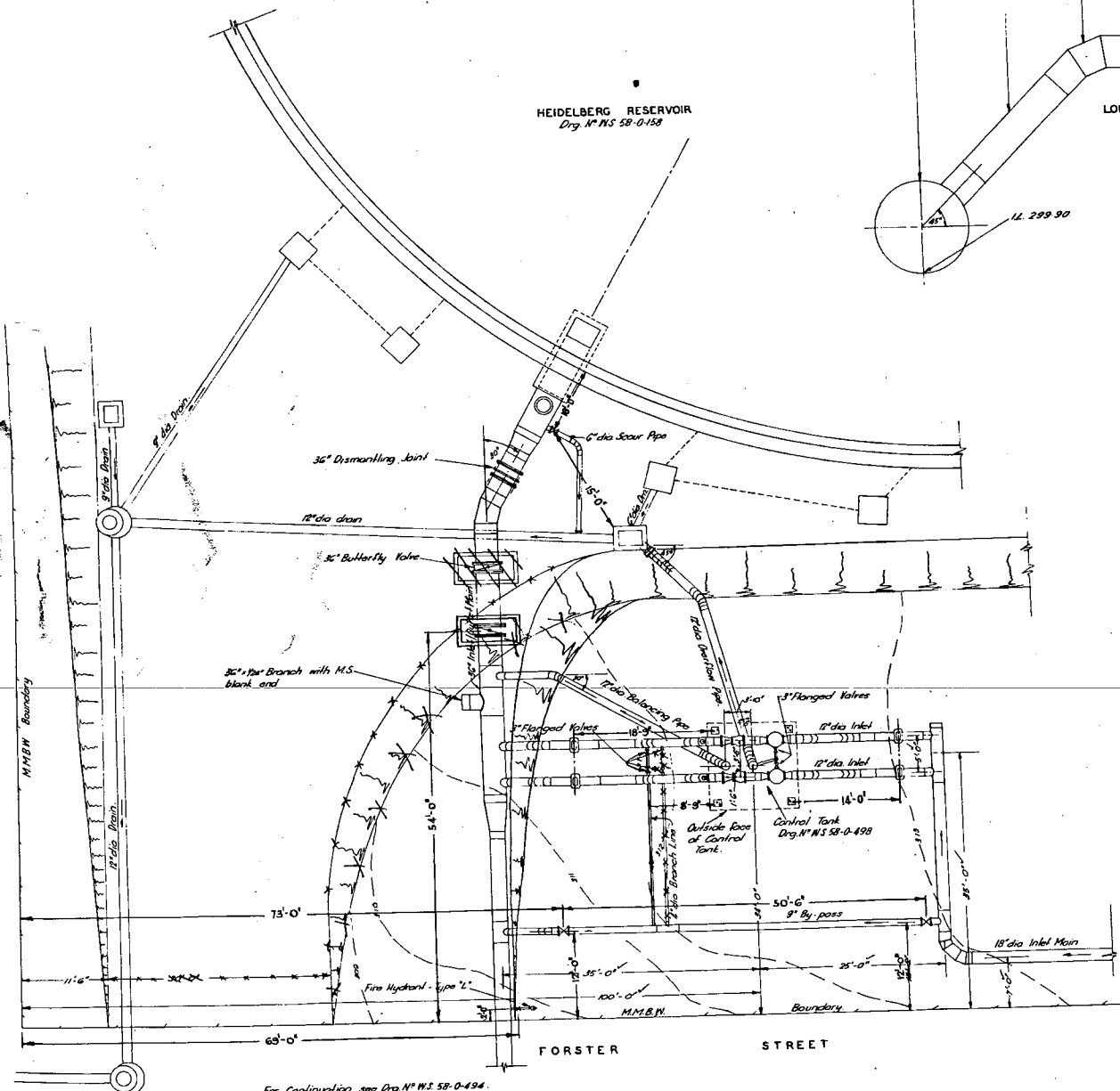
LONGITUDINAL SECTION ON 12" DIA. INLET MAIN
Scale: 1/8" = 1' Foot



LONGITUDINAL SECTION ON 12" DIA. OVERFLOW PIPE
Scale: 1/8" = 1' Foot



LONGITUDINAL SECTION ON 12" DIA. BALANCING PIPE
Scale: 1/8" = 1' Foot



PLAN OF INLET AND OUTLET MAINS
SCALE: 1/8" = 1' FOOT

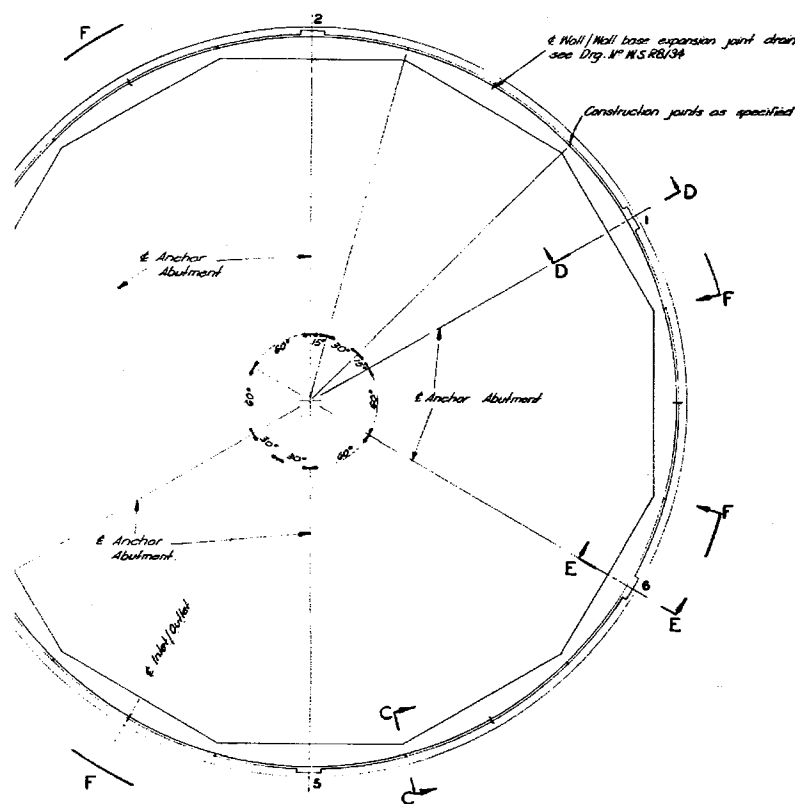
Reference: Heidelberg Reservoir - Control Tank - General Arrangement - Dry # MS 50-0-438
Heidelberg Reservoir - 12" Inlet Main & Connections to Existing Main - Dry # MS 50-0-444
Heidelberg Reservoir - Longitudinal Section of Inlet Main - Dry # MS 50-0-494
Heidelberg Reservoir - Dry # MS 50-0-158
Corros. N 56/9

Notes: All notes below ground surface to be provided with suitable protection to Dry # MS 35/41.
Material lists 58-M-9, 58-M-19, 58-M-21.

Constructed February 1959

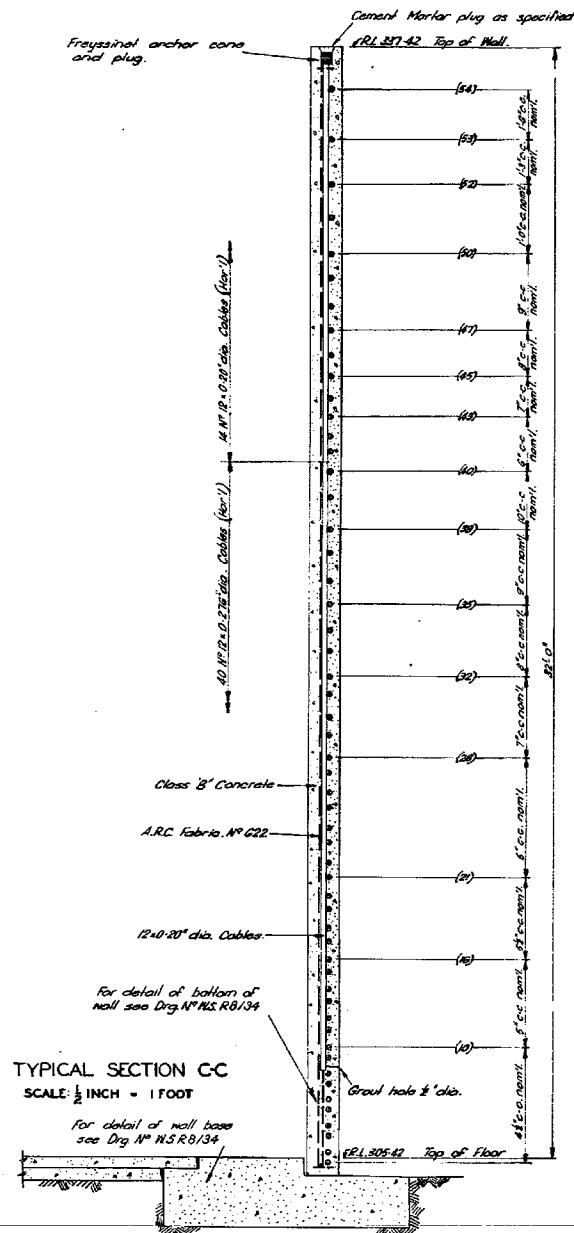
Chief Investigating & Designing Engineer

Revision	By	Date
1	M. M.	HEIDELBERG
2	M. M.	DETAILS OF
3	M. M.	ARF
4	M. M.	SCALE: AS SH
5	M. M.	Drawn
6	M. M.	Checked
7	M. M.	Checked
8	M. M.	Checked
9	M. M.	Checked
10	M. M.	Checked



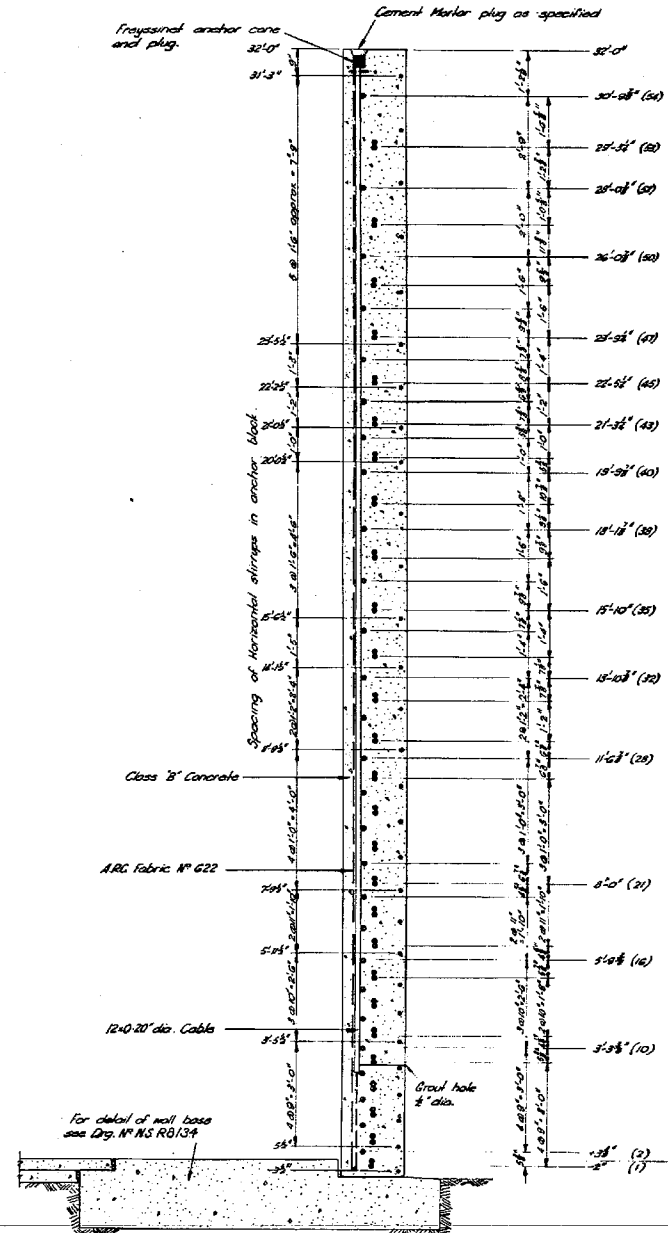
PLAN OF TANK WALL
SCALE: 20 FEET TO 1 INCH

ments numbered thus - 1,2,3,4,5,6
of anchor abutments
to tank areas see

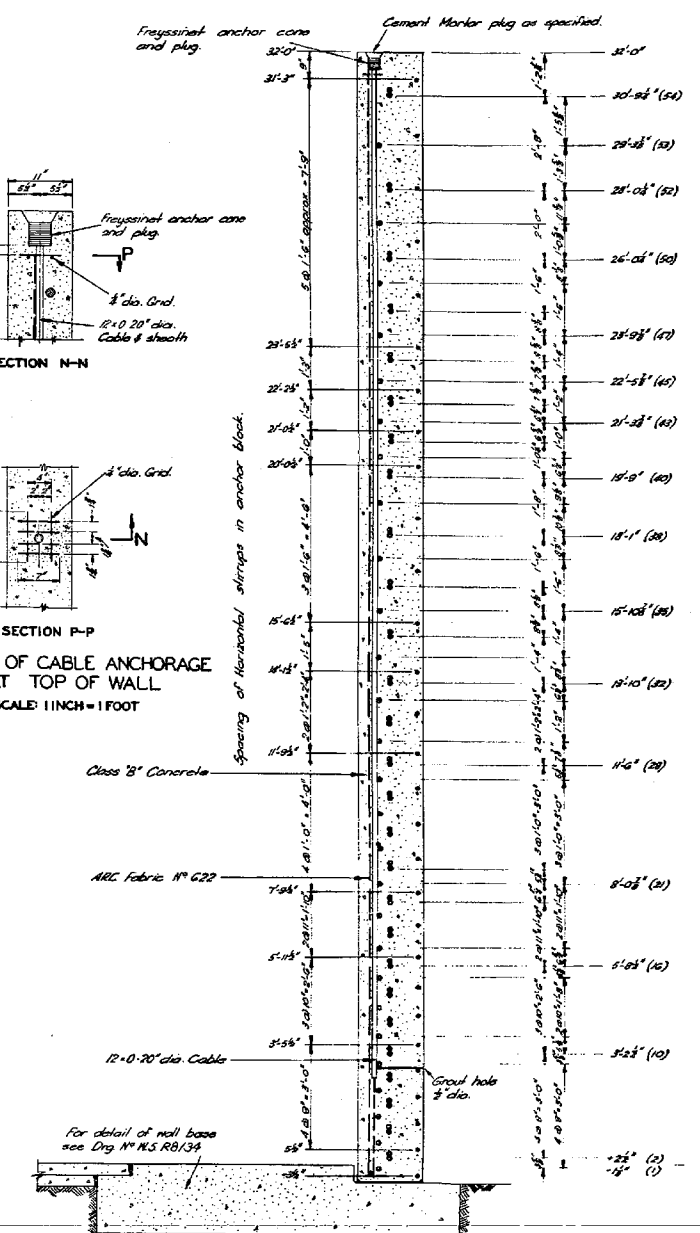


TYPICAL SECTION C-C
SCALE: 1/2 INCH = 1 FOOT

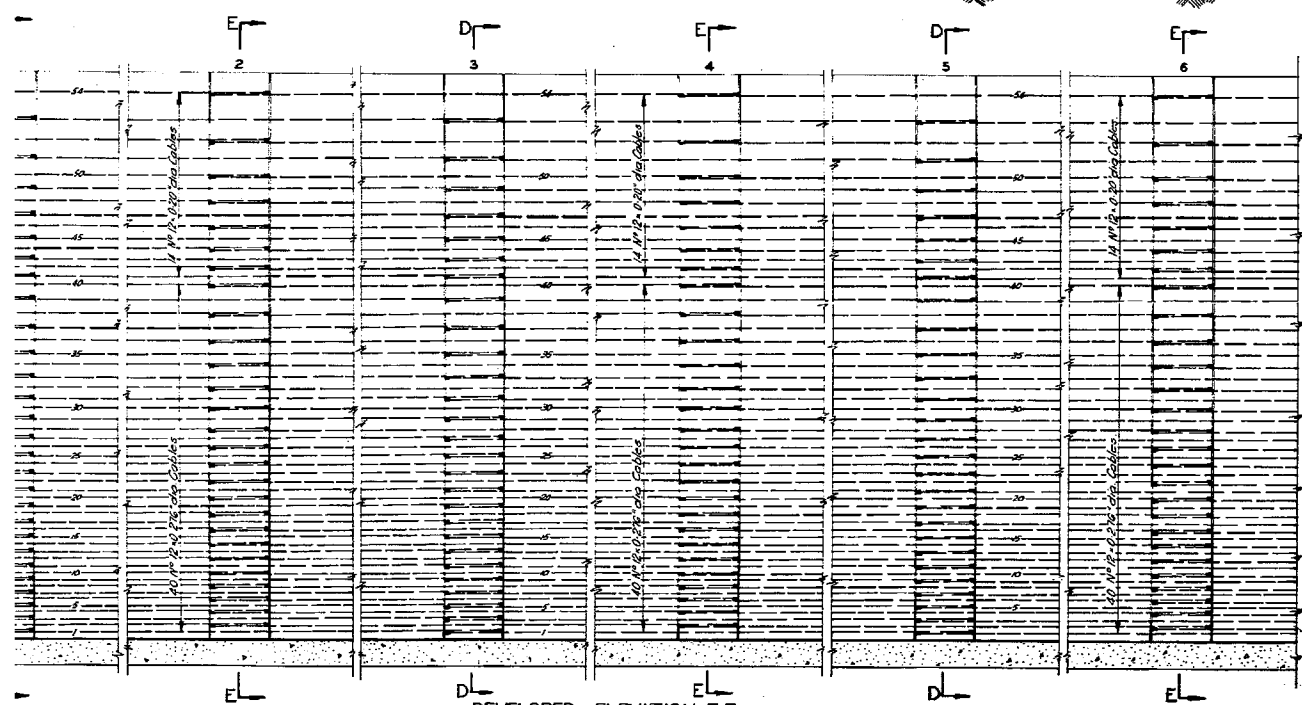
For detail of wall base
see Drg. N° MS RB/34



SECTION D-D (ANCHOR ABUTMENT 1.3.5)
SCALE: 1/2 INCH = 1 FOOT

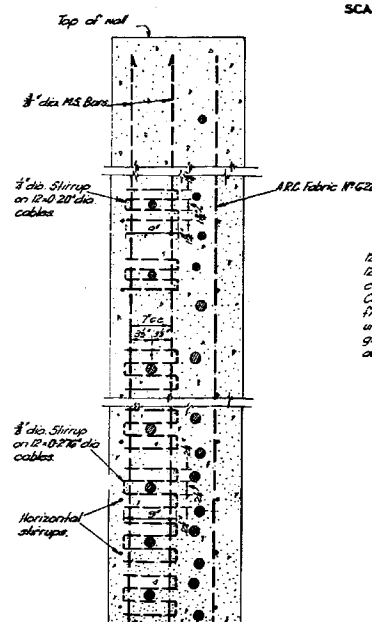


SECTION E-E (ANCHOR ABUTMENT 2.4.6)
SCALE: 1/2 INCH = 1 FOOT

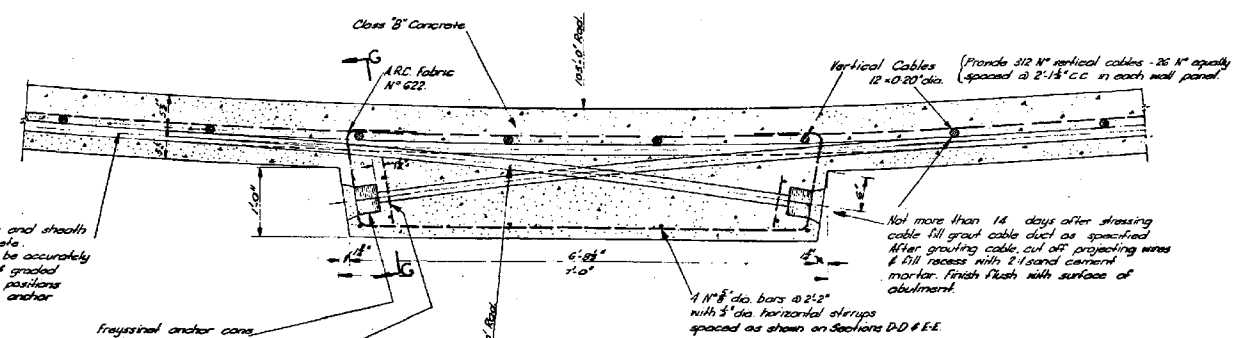


DEVELOPED ELEVATION F-F
SCALE: VERT. 1/2 INCH = 1 FOOT
HORIZ. 1/2 INCH = 1 FOOT

Note:
Vertical cables not shown.
MS Reinforcement not shown.



SECTION G-G



DETAIL OF ANCHOR ABUTMENT
SCALE: 1 INCH = 1 FOOT

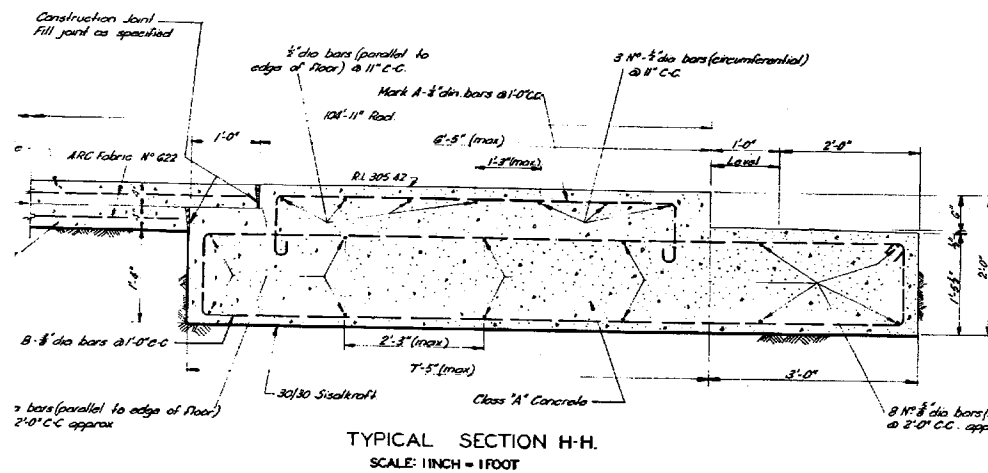
Reference:
Concrete Water Tank Heidelberg, Tender Drawing Drg. N° MS RB/31
Heidelberg Reservoir - Concrete Water Tank to be constructed for the M.M.B.W.
- Site Plan, Drainage & Floor Details, Drg. N° MS RB/32
- Details of Wall Base & Gird, Drg. N° MS RB/34

Correspondence: 58/184
Specification: (58-A-62)
(58-A-128)

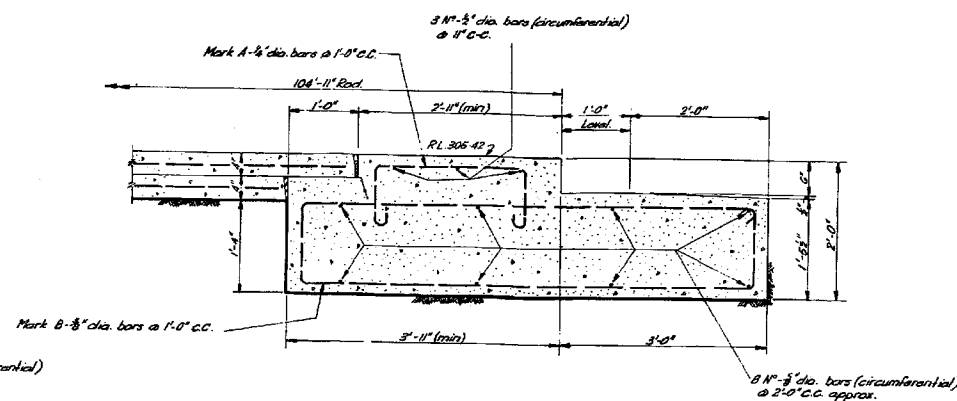
CONTRACT N° 4261

Constructed As Designed 30-7-58 to 17-12-59

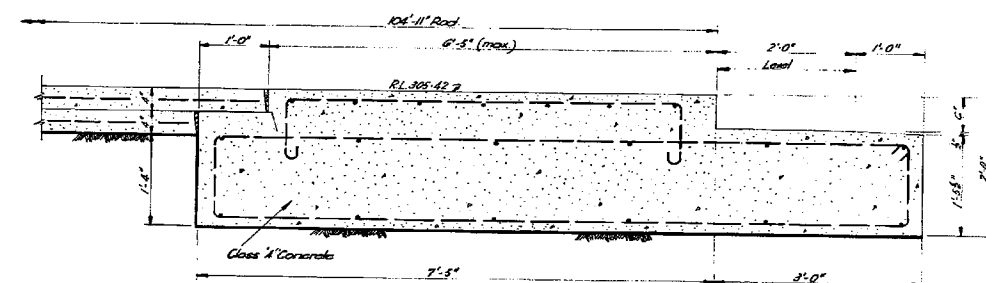
HEIDELBERG RESERVOIR	
CONCRETE WATER TANK TO BE CONSTRUCTED FOR THE M.M.B.W.	
DETAILS OF TANK WALL	
Revision:	DRG. No. W.S.
	R8/33
	July 1959
	(58-0-159)



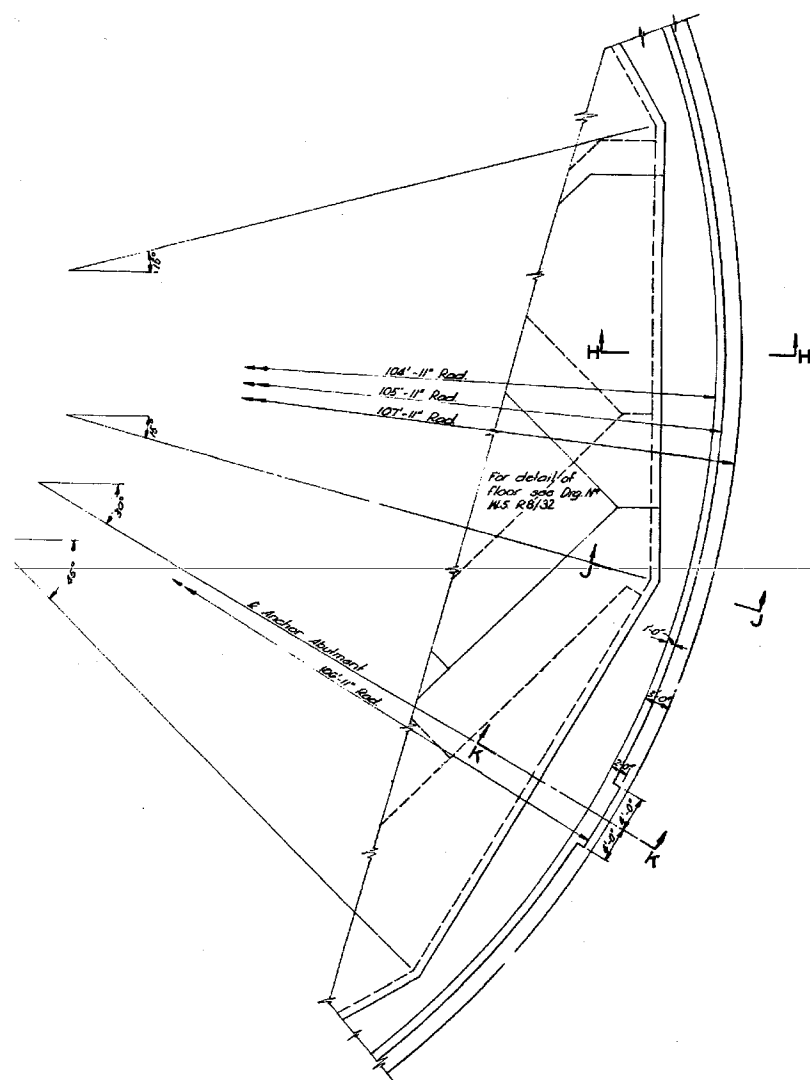
TYPICAL SECTION H-H.
SCALE: 1 INCH = 1 FOOT



SECTION J-J
SCALE: 1 INCH = 1 FOOT

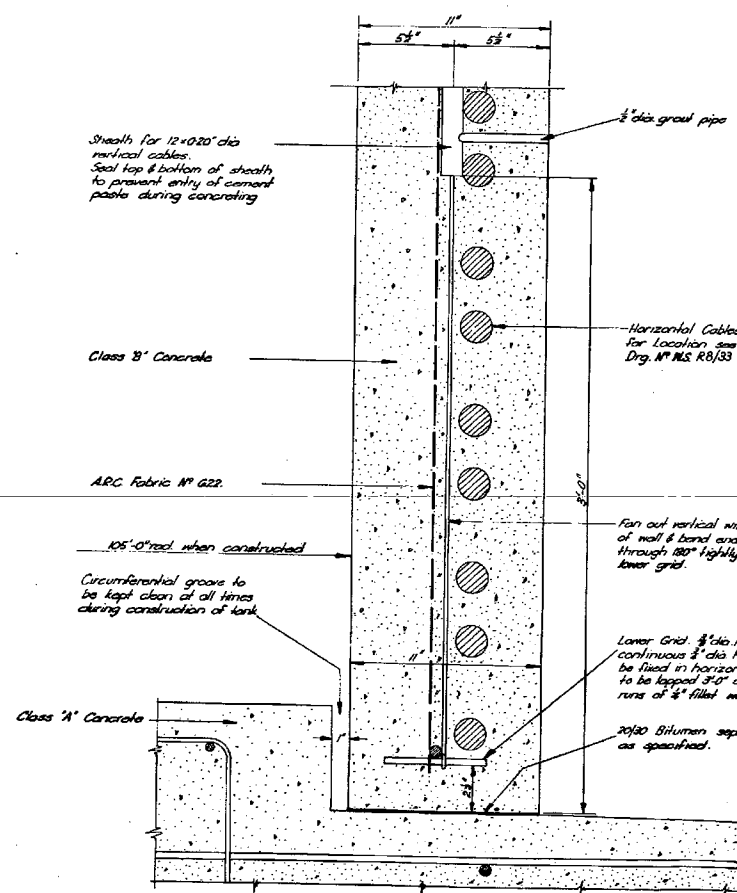


SECTION K-K
TYPICAL SECTION UNDER WALL ANCHOR ABUTMENT
SCALE: 1 INCH = 1 FOOT

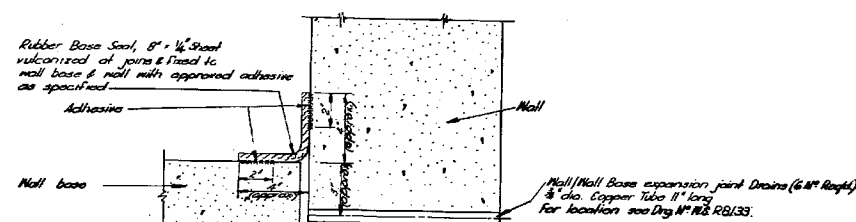


PART PLAN OF WALL BASE
SCALE: 1/2 INCH = 1 FOOT

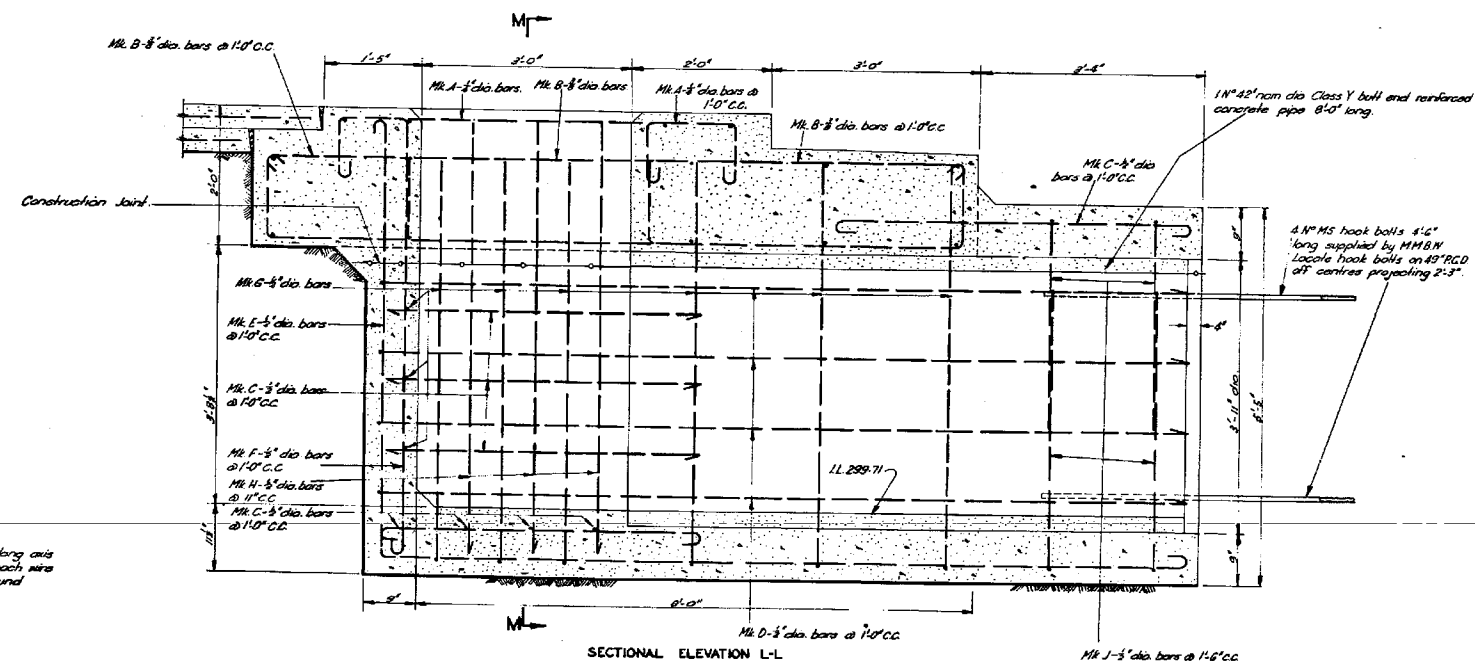
For location of anchor abutments see
Drg. N° MS R8/32 & MS R8/33



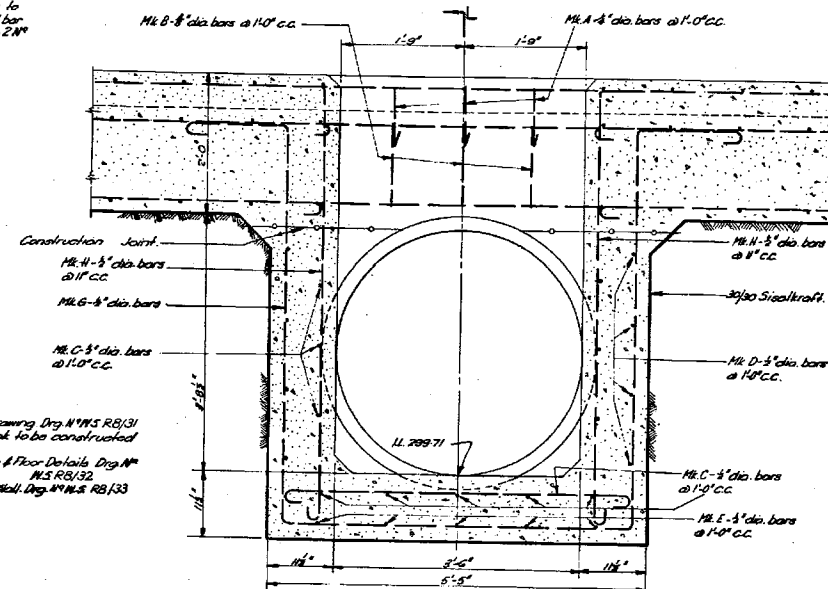
TYPICAL DETAIL AT BOTTOM OF WALL
SCALE: 3 INCHES = 1 FOOT



DETAIL OF WATER STOP AT BOTTOM OF WALL
SCALE: 3 INCHES = 1 FOOT



SECTIONAL ELEVATION L-L



SECTIONAL ELEVATION M-M

DETAIL OF OUTLET
SCALE: 1 INCH = 1 FOOT
For location see Drg. N° MS R8/32

References:
Concrete Water Tank, Heidelberg - Tender Drawing Drg. N° MS R8/31
Heidelberg Reservoir - Concrete Water Tank to be constructed
for the M.M.B.W.
- Site Plan Drainage & Floor Details Drg. N°
MS R8/32
- Details of Tank Wall Drg. N° MS R8/33

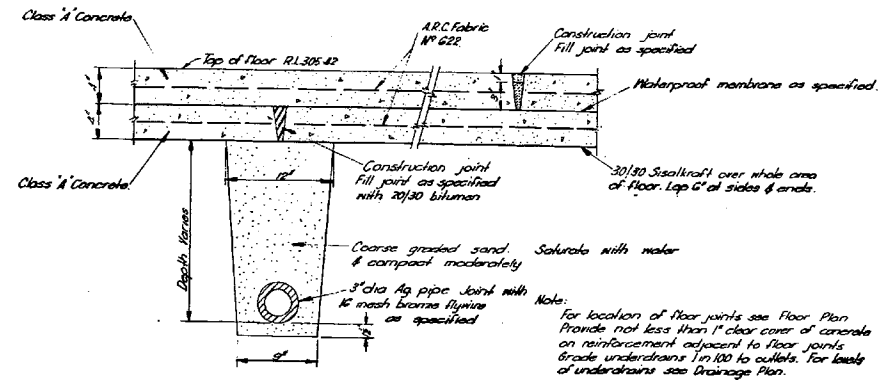
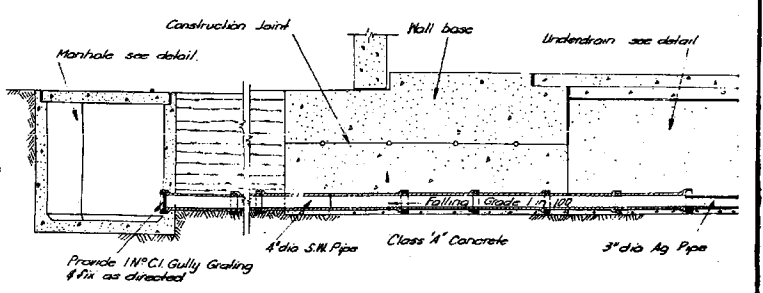
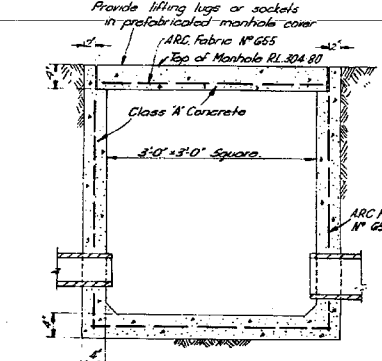
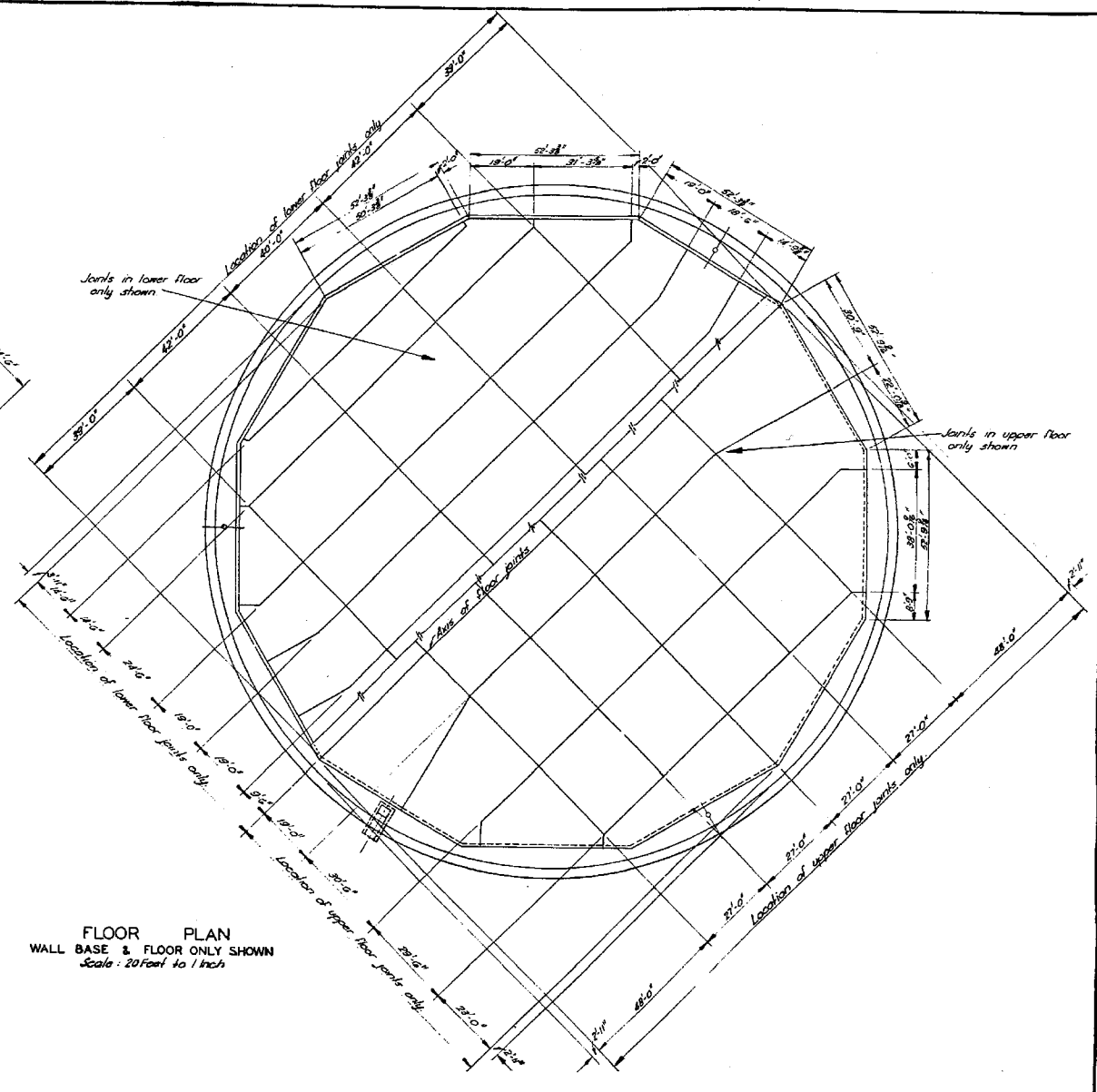
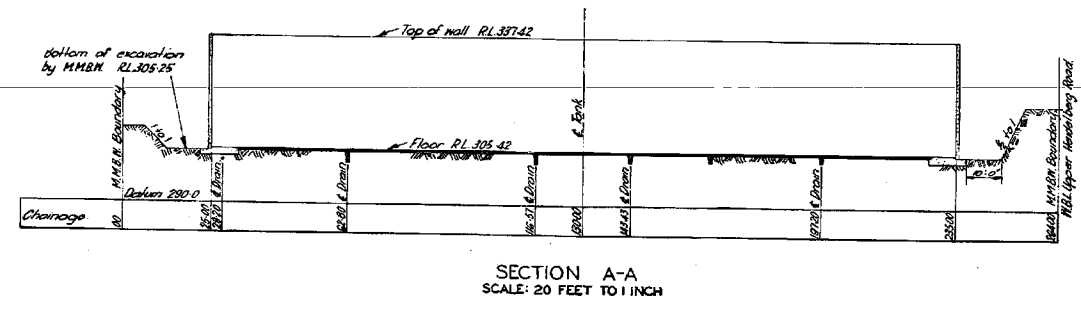
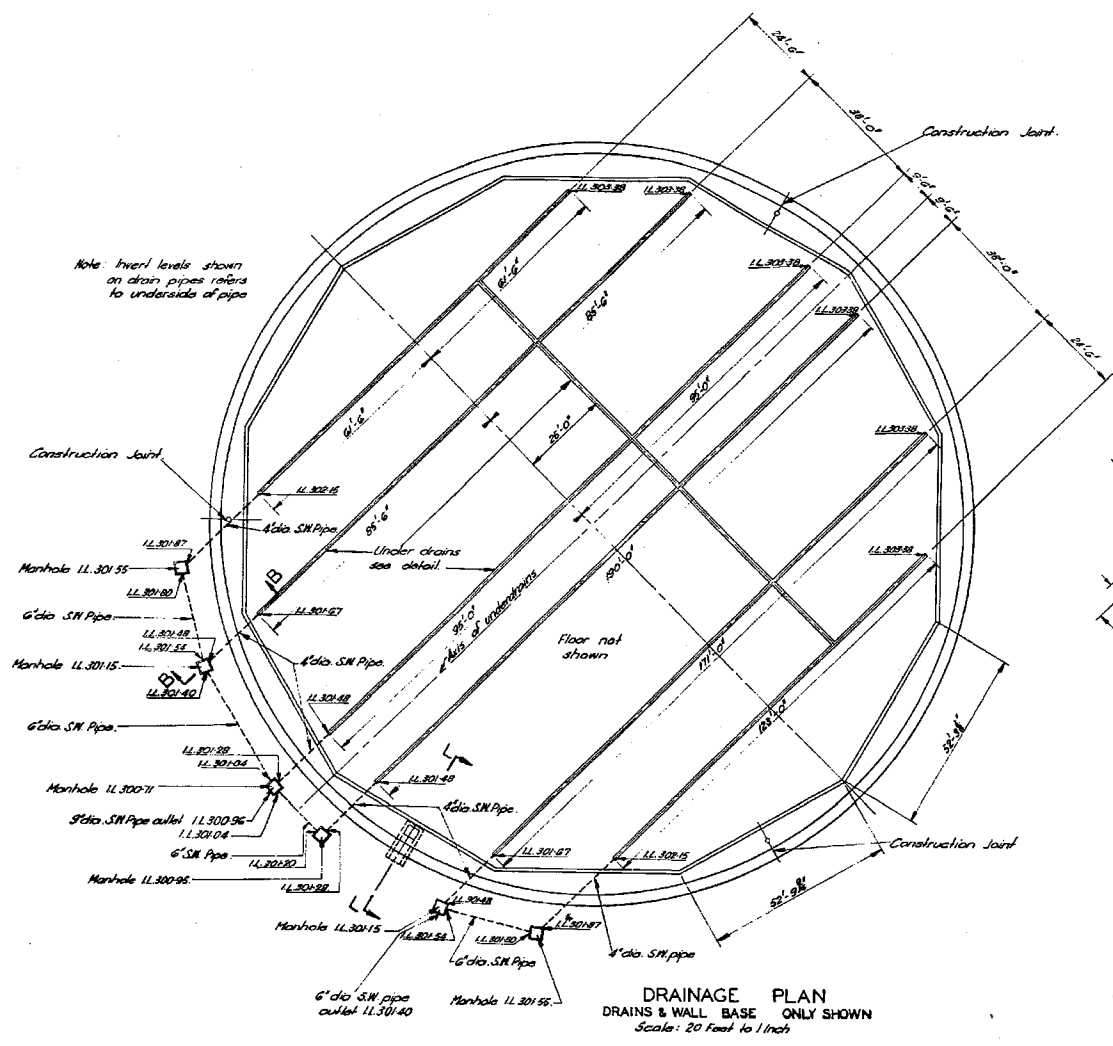
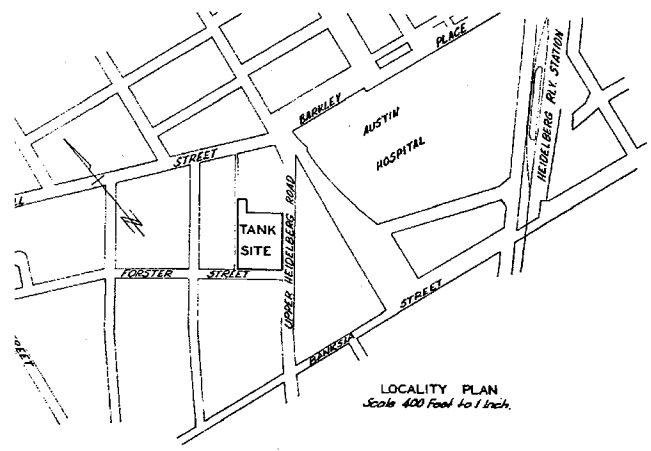
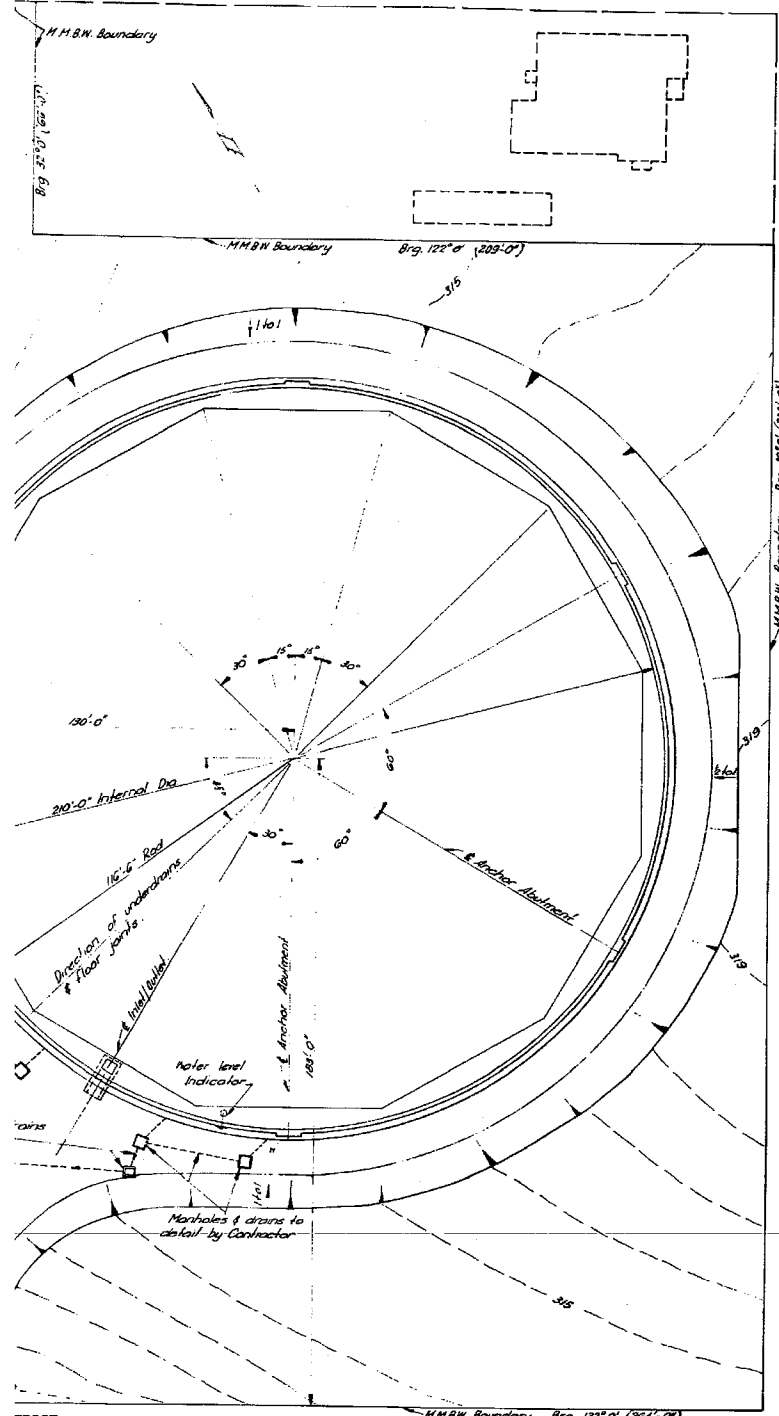
Correspondence: 58/788

Specification: (58-A-68
(58-A-128

CONTRACT N° 4261

Constructed As Designed 30-7-58 to 17-12-59

HEIDELBERG RESERVOIR	
CONCRETE WATER TANK TO BE CONSTRUCTED FOR THE M.M.B.W.	
DETAIL OF WALL BASE & OUTLET	
Revision:	DWG. No. W. S.
	R8/34
	14/1/58



References: Concrete Water Tank, Heidelberg Tender Drawing, Dg. N° NS R.B./31.
Heidelberg Reservoir: Concrete Water Tank to be constructed for the MMBW.
Details of Tank Wall, Dg. N° NS R.B./32.
Details of Wall Base & Outlet, Dg. N° NS R.B./34.

Correspondence: 58/784

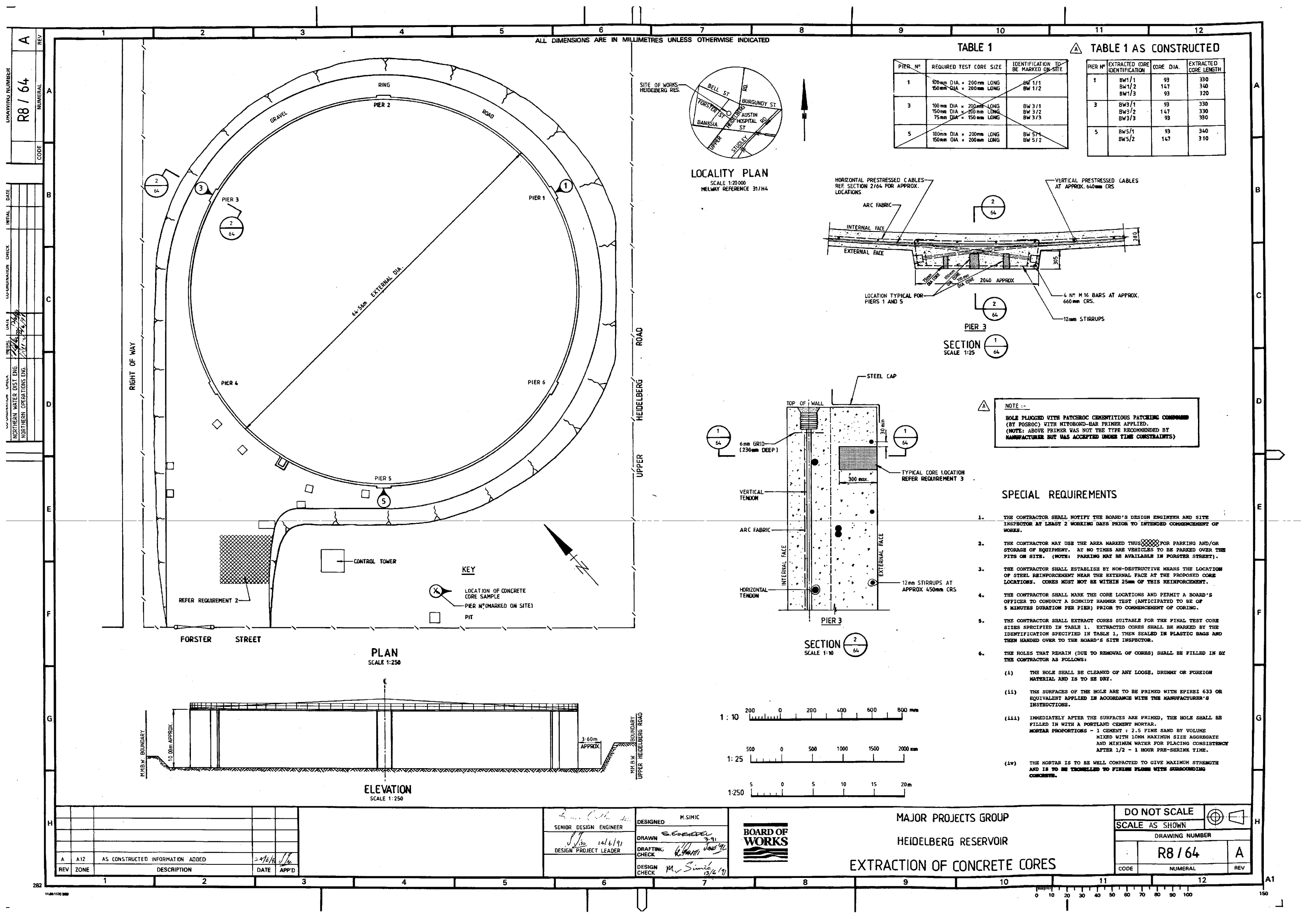
Specification: 58-A-68.
58-A-128.

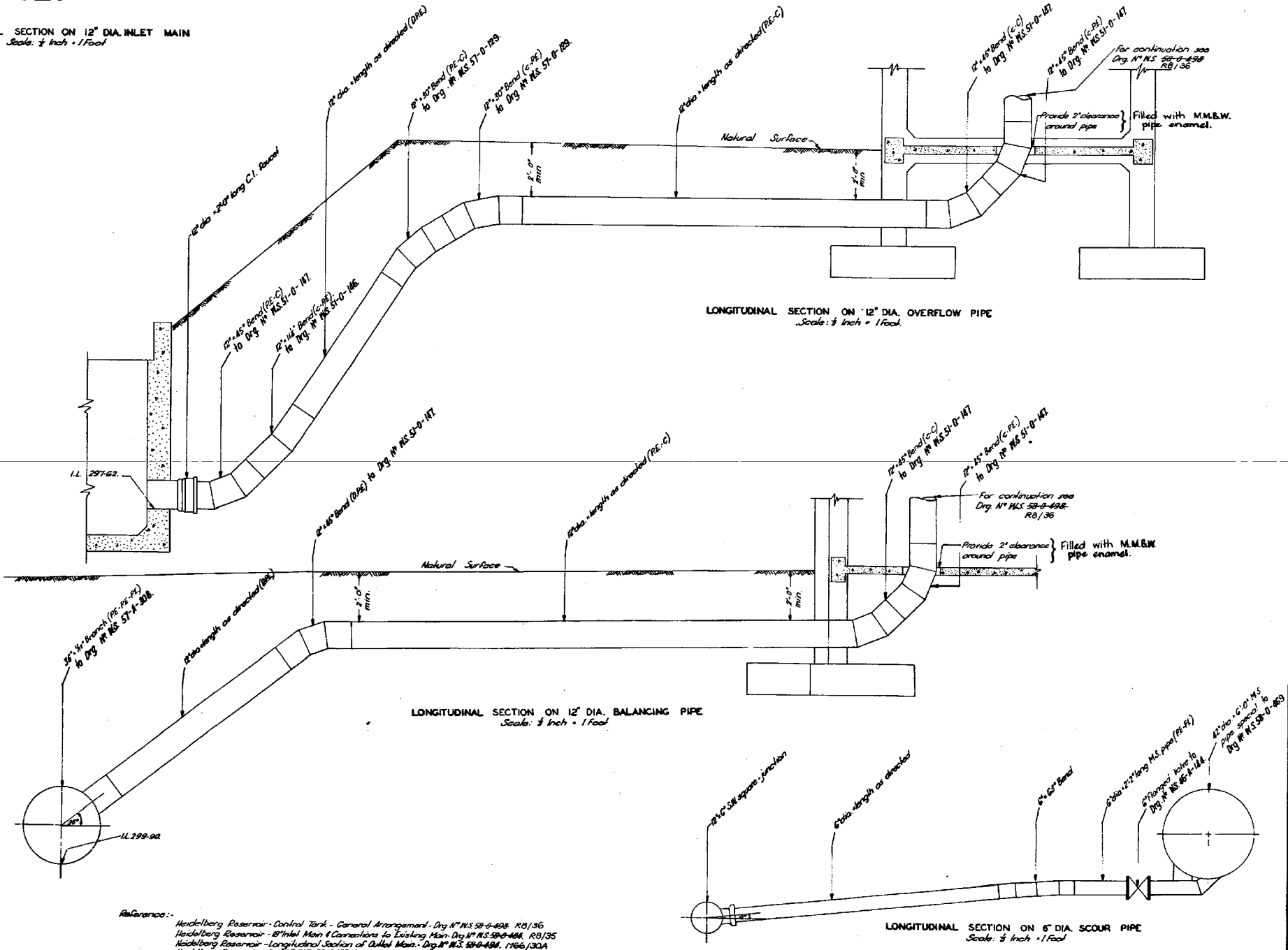
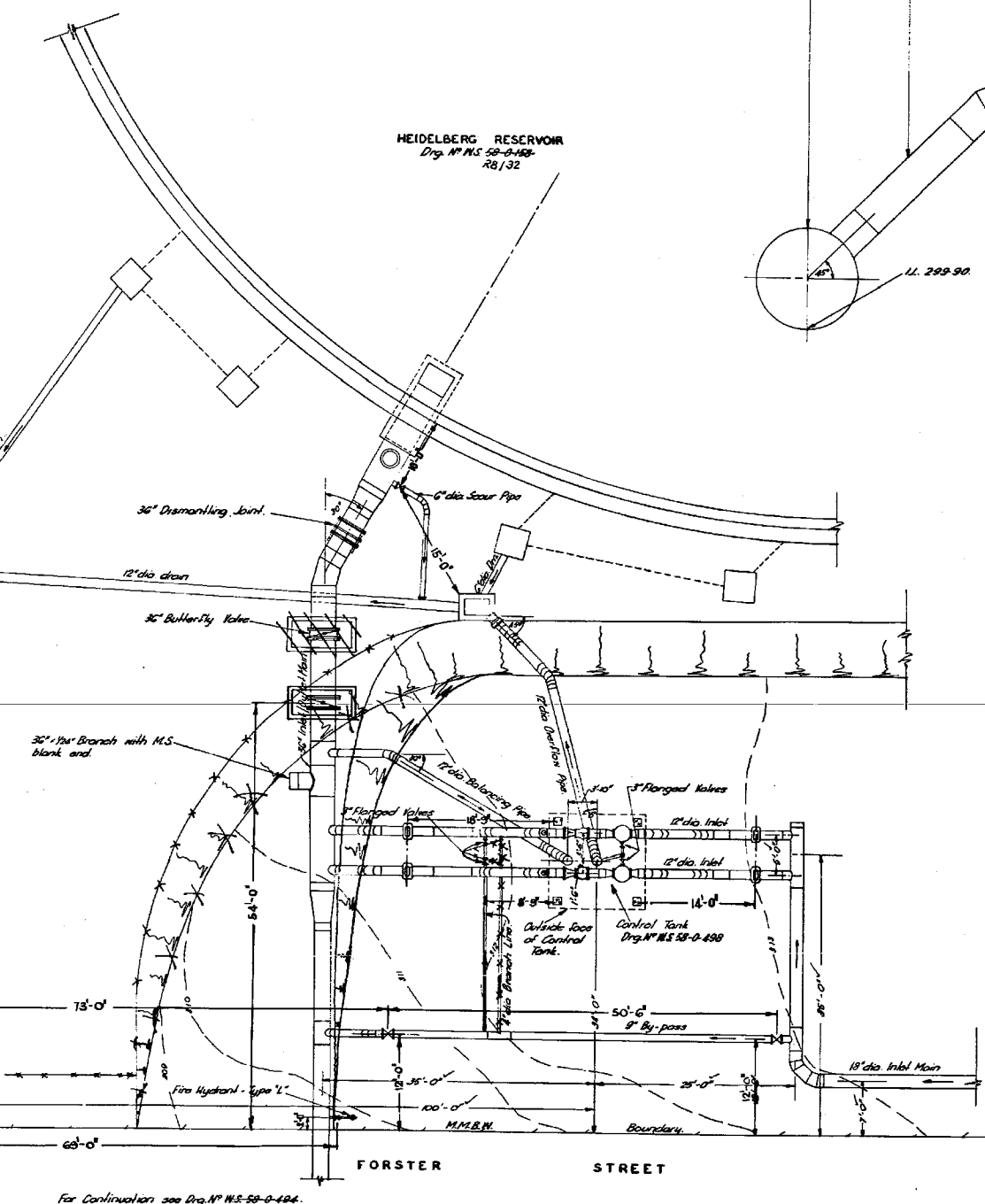
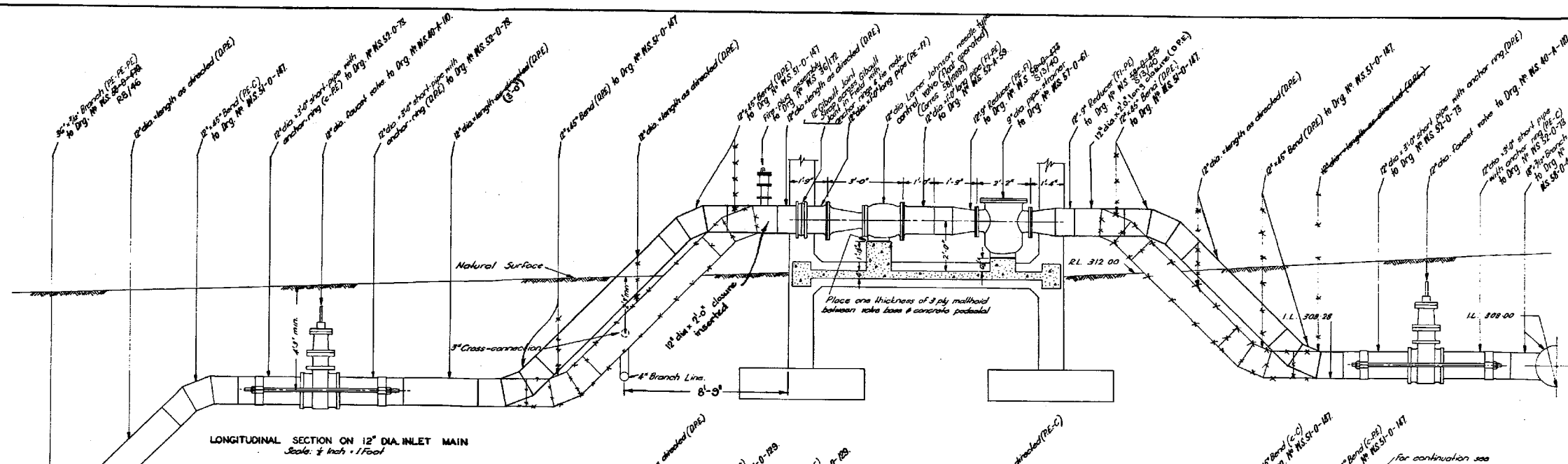
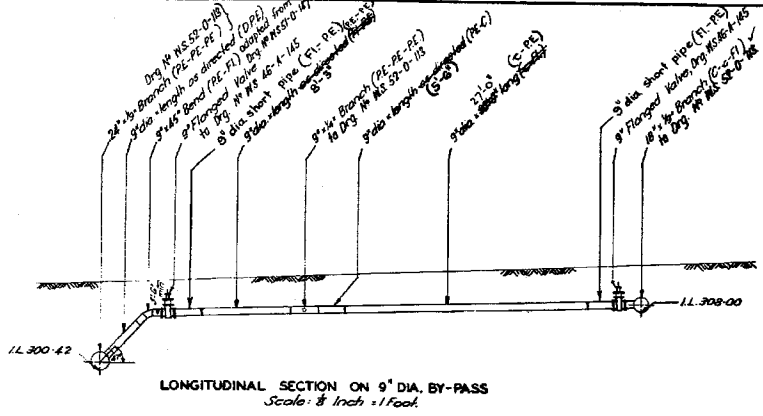
CONTRACT N° 4281

CAPACITY TO T.W.L. 335'-50" - 6.5 M.G.

Constructed As Designed 30-7-58 to 17-12-59

HEIDELBERG RESERVOIR	
CONCRETE WATER TANK TO BE CONSTRUCTED FOR THE M.M.B.W.	
SITE PLAN, DRAINAGE & FLOOR DETAILS	
Revision	DRG. No. W. S.
	R8/32
	July 1958





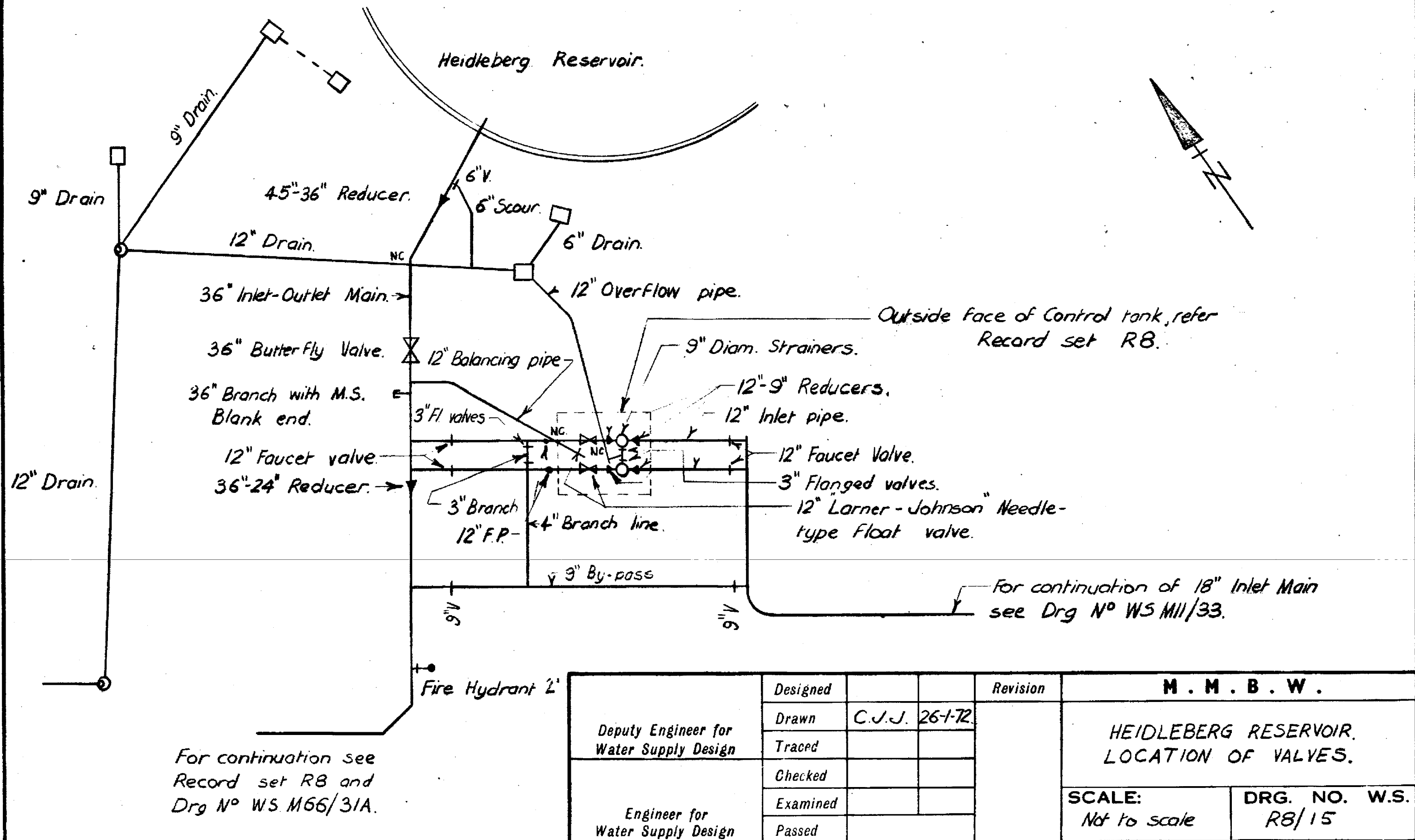
Reference: Heidelberg Reservoir - Control Tank - General Arrangement - Drg. N° MS 58-0-488, RB/36
 Heidelberg Reservoir - 18\"/>

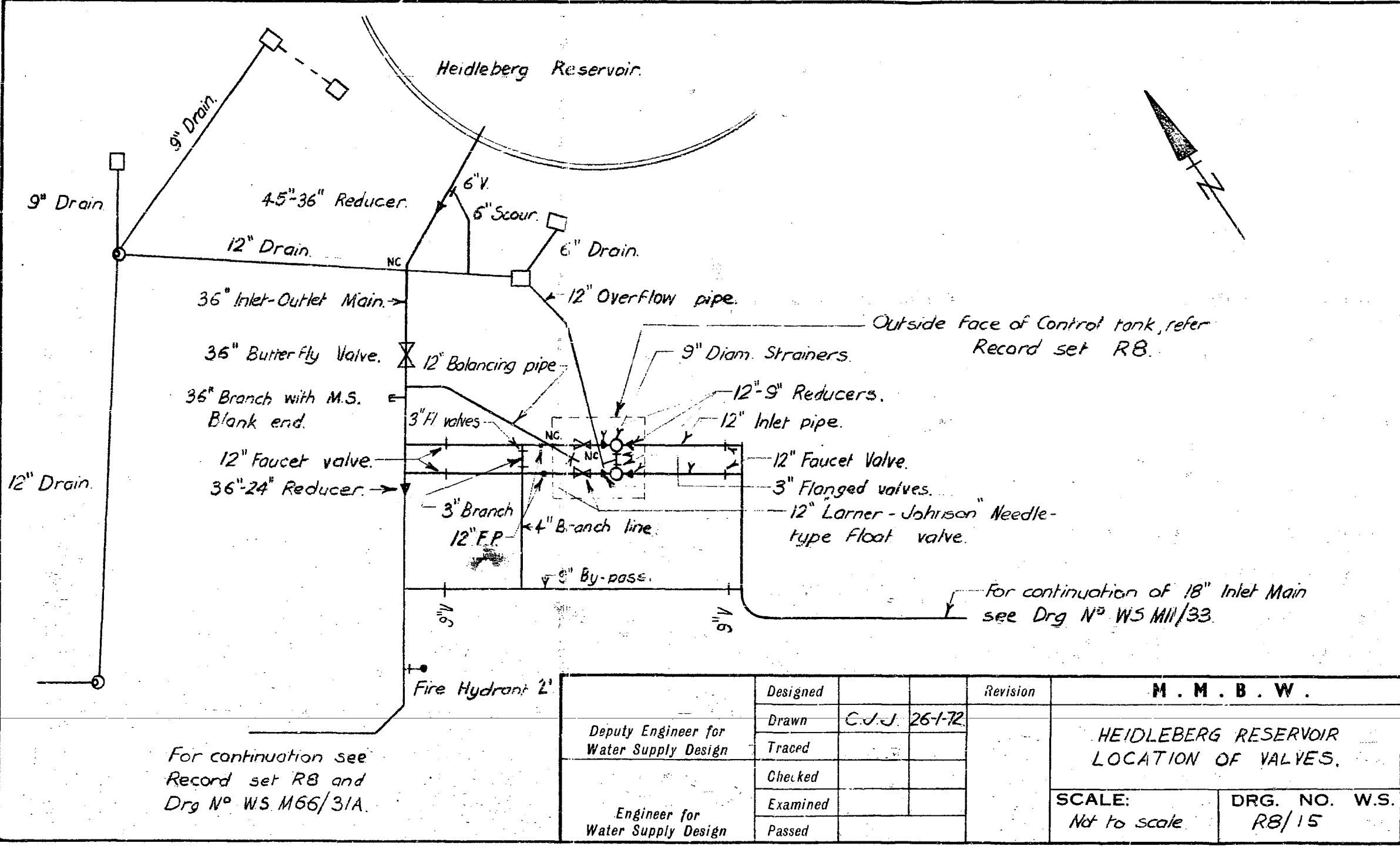
Notes: All notes below ground surface to be provided with spandrel protection to Drg. N° MS 35/41.
 Material lists: 58-M-3, 58-M-13, 58-M-21.

Constructed February 1959.

John J. Walsh
 Chief Investigating & Designing Engineer

M. M. B. W.			
HEIDELBERG RESERVOIR			
DETAILS OF INLET AND OUTLET ARRANGEMENTS			
SCALE: AS SHOWN	DESIGNED	DATE: 12-11-58	DRG. No. W. S.
	DRAWN	DATE: 12-11-58	R8/108
	CHECKED	DATE: 12-11-58	(58-A-488)





Deputy Engineer for Water Supply Design	Designed			Revision	M . M . B . W .	
	Drawn	C.J.J.	26-1-72		HEIDLEBERG RESERVOIR LOCATION OF VALVES.	
	Traced					
	Checked				SCALE: Not to scale	
Engineer for Water Supply Design	Examined				DRG. NO. W.S.	
	Passed				R8/15	

1/20"

Appendix F - EPA Priority Site Register

PRIORITY SITES REGISTER

Information as at 30 September 2015

The Priority Sites Register is updated monthly and the information on it may not be accurate, current or complete and may be subject to change without notice.

EPA has a key responsibility in protecting beneficial uses of land. Many of these uses are regulated or controlled through a range of measures to prevent contamination of land and groundwater. Land contaminated by former waste disposal, industrial and similar activities is frequently discovered during changes to land use - for example, from industrial to residential use. In most cases these can be managed at the time that the change of land use occurs. Some sites however, present a potential risk to human health or to the environment and must be dealt with as a priority. Such sites are typically subject to clean-up and/or management under EPA directions.

WHAT ARE PRIORITY SITES?

Priority Sites are sites for which EPA has issued a Clean Up Notice pursuant to section 62A, or a Pollution Abatement Notice pursuant to section 31A or 31B (relevant to land and/or groundwater) of the *Environment Protection Act 1970*. Typically these are sites where pollution of land and/or groundwater presents a potential risk to human health or to the environment. The condition of these sites is not compatible with the current or approved use of the site without active management to reduce the risk to human health and the environment. Such management can include clean up, monitoring and/or institutional controls.

The Priority Sites Register does not list sites managed by voluntary agreements or sites subject to management by planning controls (e.g. sites managed in accordance with a section 173 agreement under the *Planning and Environment Act 1987*). Land purchasers should be aware of these limitations and make their own enquiries. A site is listed on the Priority Sites Register when EPA issues a Clean Up Notice or a Pollution Abatement Notice (relevant to land and/or groundwater). A notice is a means by which EPA formalises requirements to manage pollution. Sites are removed from the Priority Sites Register once all conditions of a Notice have been complied with. This is formalised through a Notice of Revocation pursuant to section 60B of the Act.

DISCLAIMER

Users of this site accept all risks and responsibilities for losses, damages, costs and other consequences resulting directly or indirectly from use of this site and information from it.

To the maximum permitted by law, the EPA excludes all liability to any person directly or indirectly from using this site and information from it.

FURTHER INFORMATION

Additional information is available from:

EPA Information Centre

200 Victoria Street

Carlton VIC 3053

1300 EPA VIC (1300 372 842)

www.epa.vic.gov.au

Municipality	Suburb	Address	Issue	Notice Number
Alpine Shire Council	MERRIANG SOUTH	55 MERRI MEADOWS LANE	Current Industrial Site. Requires assessment and/or clean up.	0090005792
Alpine Shire Council	POREPUNKAH	Roberts Creek RD	Former Landfill. Requires assessment and/or clean up.	0090006172
Ararat Rural City Council	ARARAT	26 Grano ST	Former Industrial Site. Requires assessment and/or clean up.	0090001739
Ararat Rural City Council	ARARAT	Mclellan ST	Railway yard. Requires assessment and/or clean up.	0090001744
Ararat Rural City Council	ARARAT	Mclellan ST	Former Industrial Site. Requires assessment and/or clean up.	0090005943
Ballarat City Council	BALLARAT	Canadian Gully Reserve Geelong RD	Historical deposit of mine tailings. Requires assessment and/or clean up.	0090000494
Ballarat City Council	BALLARAT	1003 Humffray ST	Former Industrial Site. Requires assessment and/or clean up.	0090001857
Ballarat City Council	BALLARAT	Volume 6747 Folio 250	Current Industrial Site. Requires assessment and/or clean up.	0090001913
Ballarat City Council	WARRENHEIP	Ballarat-Burrumbeet RD	Accidental spill/leak (non-industrial site). Requires ongoing management.	0090002430
Ballarat City Council	MOUNT CLEAR	3 WHITEHORSE RD	Former Landfill. Requires ongoing management.	0090003912
Ballarat City Council	MOUNT CLEAR	Whitehorse RD	Former Landfill. Requires assessment and/or clean up.	0090004206

PRIORITY SITES REGISTER

Information as at 30 September 2015

Municipality	Suburb	Address	Issue	Notice Number
Ballarat City Council	MOUNT CLEAR	Whitehorse RD	Former Landfill. Requires assessment and/or clean up.	0090004207
Ballarat City Council	BUNKERS HILL	856 Greenhalghs RD	Current Industrial Site. Requires ongoing management.	0090004647
Banyule City Council	GREENSBOROUGH	131 Grimshaw ST	Current Service Station. Requires assessment and/or clean up.	0090002585
Bass Coast Shire Council	WONTHAGGI	C/a 15 Section 58 Cameron St	Former Landfill. Requires ongoing management.	0090003536
Bass Coast Shire Council	RHYLL	309 COWES-RHYLL RD	Former Landfill. Requires ongoing management.	0090003978
Bass Coast Shire Council	RHYLL	309 COWES-RHYLL RD	Former Landfill. Requires assessment and/or clean up.	0090003979
Bass Coast Shire Council	WONTHAGGI	C/a 15 Section 58 Cameron St	Former Landfill. Requires ongoing management.	0090006098
Bayside City Council	BRIGHTON	601 Hampton ST	Current Service Station. Requires ongoing management.	0090000642
Bayside City Council	CHELTENHAM	18 Hamlet ST	Current Industrial Site. Requires ongoing management.	0090001671
Bayside City Council	BRIGHTON	316 New ST	Former Service Station. Requires assessment and/or clean up.	0090003577
Brimbank City Council	DEER PARK	753 Tilburn RD	Contaminated soil is retained and managed onsite. Requires assessment and/or clean up.	0090000162
Brimbank City Council	SYDENHAM	362 SYDENHAM RD	Former Landfill. Requires assessment and/or clean up.	0090000921
Brimbank City Council	SUNSHINE NORTH	47 MCINTYRE RD	Former Industrial Site. Requires ongoing management.	0090001549
Brimbank City Council	DEER PARK	765 BALLARAT RD	Former Industrial Site. Requires assessment and/or clean up.	0090001886
Brimbank City Council	BROOKLYN	Bunting RD	Former Landfill. Requires ongoing management.	0090002743
Brimbank City Council	SUNSHINE	16 THIRD AV	Current Industrial Site. Requires assessment and/or clean up.	0090003227
Brimbank City Council	BROOKLYN	594 Geelong RD	Former Landfill. Requires ongoing management.	0090003478
Brimbank City Council	KEILOR DOWNS	Green Gully RD	Former Landfill. Requires ongoing management.	0090003524
Brimbank City Council	BROOKLYN	44 McDonald RD	Former Landfill. Requires ongoing management.	0090003591
Brimbank City Council	SYDENHAM	362 SYDENHAM RD	Former Landfill. Requires ongoing management.	0090003753
Brimbank City Council	SUNSHINE	6 FIRST AV	Illegal dumping. Requires assessment and/or clean up.	0090004622
Brimbank City Council	Sunshine North	56 Baldwin AV	Accidental spill/leak (non-industrial site). Requires assessment and/or clean up.	0090004879
Brimbank City Council	SUNSHINE NORTH	47 MCINTYRE RD	Former Industrial Site. Requires ongoing management.	0090005473
Brimbank City Council	TULLAMARINE	6 Prima Court EISNER CT	Illegal dumping. Requires assessment and/or clean up.	0090005495
Brimbank City Council	SUNSHINE NORTH	62 SPALDING AV	Current Industrial Site. Requires assessment and/or clean up.	0090005934
Buloke Shire Council	BIRCHIP	CA 53B-D Parish of Wirmbirchip, SUNRAYSIA HWY	Illegal dumping. Requires assessment and/or clean up.	0090005615
Campaspe Shire Council	BAMAWM EXTENSION	1133 ECHUCA-MITIAMO RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090001745
Campaspe Shire Council	KYABRAM	Graham RD	Former Landfill. Requires ongoing management.	0090003562
Campaspe Shire Council	KYABRAM	Graham RD	Former Landfill. Requires ongoing management.	0090003563
Campaspe Shire Council	ECHUCA	Echuca Landfill Echuca-Kyabram RD	Former Landfill. Requires ongoing management.	0090003568
Campaspe Shire Council	ECHUCA	Echuca Landfill Echuca-Kyabram RD	Former Landfill. Requires ongoing management.	0090003569
Campaspe Shire Council	DIGGORA	ODONNELL RD	Former Landfill. Requires ongoing management.	0090003586
Campaspe Shire Council	DIGGORA	ODONNELL RD	Former Landfill. Requires ongoing management.	0090003587
Campaspe Shire Council	DIGGORA	ODONNELL RD	Former Landfill. Requires ongoing management.	0090003588
Campaspe Shire Council	ECHUCA	176 OGILVIE AV	Current petroleum storage site. Requires assessment and/or clean up.	0090004946
Cardinia Shire Council	PAKENHAM	570 Bald Hill Road	Former Landfill. Requires ongoing management.	0090003597

PRIORITY SITES REGISTER

Information as at 30 September 2015

Municipality	Suburb	Address	Issue	Notice Number
Cardinia Shire Council	NAR NAR GOON	51 MAIN ST	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090005942
Casey City Council	NARRE WARREN	188 QUARRY RD	Former Landfill. Requires ongoing management.	0090003600
Central Goldfields Shire Council	CARISBROOK	129 WILLIAMS RD	Former Landfill. Requires ongoing management.	0090003565
Central Goldfields Shire Council	CARISBROOK	129 WILLIAMS RD	Former Landfill. Requires ongoing management.	0090003566
City of Greater Geelong	GEELONG	Former South Geelong LANDFILL South & West of Geelong W'bool Railway L	Former Landfill. Requires assessment and/or clean up.	0090006355
City of Hobsons Bay	SPOTSWOOD	29 Francis ST	Current petroleum storage site. Requires assessment and/or clean up.	0090000989
Colac-Otway Shire Council	COLAC	Bruce ST	Former Landfill. Requires ongoing management.	0090001464
Colac-Otway Shire Council	COROROOKE	Factory RD	Current Industrial Site. Requires assessment and/or clean up.	0090002082
Colac-Otway Shire Council	MARENGO	Roberts RD	Former Landfill. Requires ongoing management.	0090003634
Colac-Otway Shire Council	COLAC	Bruce ST	Former Landfill. Requires ongoing management.	0090003696
Corangamite Shire Council	GLENORMISTON	Terang-Mortlake RD	Former Landfill. Requires assessment and/or clean up.	0090003620
Corangamite Shire Council	GLENORMISTON	Terang-Mortlake RD	Former Landfill.	0090003621
Corangamite Shire Council	GLENORMISTON	Terang-Mortlake RD	Former Landfill. Requires ongoing management.	0090003622
Darebin City Council	PRESTON	62 Albert ST	Current Industrial Site. Requires ongoing management.	0090000535
Darebin City Council	PRESTON	140 High ST	Former Industrial Site. Requires assessment and/or clean up.	0090000660
Darebin City Council	PRESTON	67 High ST	Former Service Station. Requires assessment and/or clean up.	0090001449
Darebin City Council	PRESTON	194 Bell ST	Former Industrial Site. Requires assessment and/or clean up.	0090002088
Darebin City Council	PRESTON	3 & 7 NEWMAN ST	Former Industrial Site. Requires assessment and/or clean up.	0090003150
Darebin City Council	NORTHCOTE	Clifton ST	Former Landfill. Requires ongoing management.	0090003493
Darebin City Council	RESERVOIR	87 Newlands RD	Former Landfill. Requires ongoing management.	0090003508
Darebin City Council	PRESTON	74 RAGLAN ST	Former Industrial Site. Requires assessment and/or clean up.	0090005520
East Gippsland Shire Council	ORBOST	44 Salsbury ST	Former Service Station. Requires assessment and/or clean up.	0090001588
East Gippsland Shire Council	BAIRNSDALE	201 Main ST	Former Service Station. Requires assessment and/or clean up.	0090005434
East Gippsland Shire Council	BAIRNSDALE	68 BOSWORTH ROAD	Former Landfill. Requires ongoing management.	0090006055
East Gippsland Shire Council	BAIRNSDALE	205 Main ST	Contaminated soil is retained and managed onsite. Requires ongoing management.	0090006291
Frankston City Council	Frankston	McClelland DR	Former Landfill. Requires ongoing management.	0090003594
Frankston City Council	FRANKSTON	3 ROSELLA ST	Current Industrial Site. Requires assessment and/or clean up.	0090006242
Frankston City Council	FRANKSTON SOUTH	4 GOLF LINKS RD	Current Service Station. Requires assessment and/or clean up.	0090006300
Glen Eira City Council	CAULFIELD SOUTH	371 Hawthorn RD	Former Service Station. Requires assessment and/or clean up.	0090001532
Glen Eira City Council	CAULFIELD SOUTH	371 Hawthorn RD	Former Service Station. Requires assessment and/or clean up.	0090003578
Glen Eira City Council	CAULFIELD SOUTH	818 Glen Huntly RD	Former Service Station. Requires assessment and/or clean up.	0090004221
Golden Plains Shire Council	MEREDITH	119 MEREDITH-MT MERCER RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090004477
Greater Bendigo City Council	MYERS FLAT	28 WILLIAMS RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090004173

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Municipality	Suburb	Address	Issue	Notice Number
Greater Bendigo City Council	White Hills	(Crown Allotment 432E Section E)	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090004649
Greater Bendigo City Council	CALIFORNIA GULLY	45 Sandhurst RD	Current petroleum storage site. Requires assessment and/or clean up.	0090004999
Greater Bendigo City Council	HEATHCOTE	HEATHCOTE PIT - HIRDS ROAD ALLOTMENT 31B SECTION 3	Industrial waste has been dumped at the site. Requires ongoing management.	0090005324
Greater Bendigo City Council	EAGLEHAWK	219 SIMPSONS RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090005659
Greater Bendigo City Council	MAIDEN GULLY	469 OLYMPIC PDE	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090005797
Greater Bendigo City Council	BENDIGO	Crown Allotment 432E, Section E Parish of Sandhurst, Bendigo	Former Landfill. Requires ongoing management.	0090006184
Greater Dandenong City Council	SPRINGVALE SOUTH	East Side Of Clarke RD	Former Landfill. Requires ongoing management.	0090000608
Greater Dandenong City Council	DANDENONG SOUTH	Greens Road GREENS RD	Former Industrial Site. Requires ongoing management.	0090001391
Greater Dandenong City Council	SPRINGVALE	917 Princes HWY	Former Industrial Site. Requires assessment and/or clean up.	0090001557
Greater Dandenong City Council	SPRINGVALE SOUTH	East Side Of Clarke RD	Former Landfill. Requires ongoing management.	0090003693
Greater Dandenong City Council	SPRINGVALE SOUTH	Clarke RD	Former Landfill. Requires ongoing management.	0090003848
Greater Dandenong City Council	SPRINGVALE SOUTH	Clarke RD	Former Landfill. Requires ongoing management.	0090003849
Greater Dandenong City Council	SPRINGVALE SOUTH	Clarke RD	Former Landfill. Requires ongoing management.	0090003850
Greater Dandenong City Council	DANDENONG	230 Frankston-Dandenong RD	Former Service Station. Requires assessment and/or clean up.	0090004119
Greater Dandenong City Council	DANDENONG SOUTH	185 Dandenong-Hastings RD	Former Landfill. Requires ongoing management.	0090004214
Greater Dandenong City Council	KEYSBOROUGH	151 CHAPEL RD	Land and/or groundwater impacted by intensive animal industry. Requires assessment and/or clean up.	0090005573
Greater Dandenong City Council	SPRINGVALE	310 Springvale RD	Current Service Station. Requires assessment and/or clean up.	0090006022
Greater Geelong City Council	CORIO	80 REFINERY RD	Current petroleum storage site. Requires ongoing management.	0090000024
Greater Geelong City Council	CORIO	Off Harpur RD	Former Service Station. Requires assessment and/or clean up.	0090000782
Greater Geelong City Council	LARA	Princes HWY	Accidental spill/leak (non-industrial site). Requires assessment and/or clean up.	0090001012
Greater Geelong City Council	GEELONG NORTH	1 Roseneath ST	Former chemical storage facility. Requires assessment and/or clean up.	0090001664
Greater Geelong City Council	DRYSDALE	97 High ST	Current Service Station. Requires ongoing management.	0090001808
Greater Geelong City Council	CORIO	83 Purnell RD	Current Service Station. Requires ongoing management.	0090002343
Greater Geelong City Council	CORIO	1500 BIDDLECOMBE AV	Current landfill. Requires assessment and/or clean up.	0090002361
Greater Geelong City Council	MANIFOLD HEIGHTS	35 Shannon AV	Former Service Station. Requires assessment and/or clean up.	0090004098
Greater Geelong City Council	NORTH GEELONG	343 MELBOURNE RD	Former Industrial Site. Requires assessment and/or clean up.	0090004124
Greater Geelong City Council	NORLANE	5 PRINCES HWY	Former Industrial Site. Requires assessment and/or clean up.	0090004126
Greater Geelong City Council	NORLANE	60 NORTH SHORE RD	Current Industrial Site. Requires assessment and/or clean up.	0090004132
Greater Geelong City Council	CORIO	80 REFINERY RD	Current Industrial Site. Requires assessment and/or clean up.	0090004215
Greater Geelong City Council	EAST GEELONG	HEARNE PDE	Contaminated soil is retained and managed onsite. Requires ongoing management.	0090004415
Greater Geelong City Council	MARSHALL	55 WOOLSCOUR LANE	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090004722

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Municipality	Suburb	Address	Issue	Notice Number
Greater Geelong City Council	POINT HENRY	420 Point Henry RD	Former Industrial Site. Requires assessment and/or clean up.	0090005302
Greater Geelong City Council	BELMONT	180 Barwon Heads RD	Former petroleum storage site. Requires ongoing management.	0090005312
Greater Geelong City Council	GEELONG WEST	151 Church ST	Former Service Station. Requires ongoing management.	0090005443
Greater Geelong City Council	MOOLAP	132 POINT HENRY RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090005545
Greater Geelong City Council	MOOLAP	72 BUCKLEY GR	Current Industrial Site. Requires assessment and/or clean up.	0090005562
Greater Geelong City Council	LOVELY BANKS	225 STACEYS RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090005998
Greater Geelong City Council	BALLAN	1 6511 Western FWY	Current Service Station. Requires ongoing management.	0090006079
Greater Shepparton City Council	KIALLA WEST	7358 Goulburn Valley HWY	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090000083
Greater Shepparton City Council	SHEPPARTON NORTH	280 Daldy RD	Former Industrial Site. Requires assessment and/or clean up.	0090001776
Greater Shepparton City Council	COSGROVE	205 COSGROVE-LEMNOS RD	Former Landfill. Requires ongoing management.	0090003551
Hepburn Shire Council	CRESWICK	18 Clunes RD	Former Service Station. Requires assessment and/or clean up.	0090000263
Hepburn Shire Council	CRESWICK	C/a 45a Parish Of Creswick County Of Talbot	Former Landfill. Requires ongoing management.	0090003558
Hepburn Shire Council	CRESWICK	C/a 45a Parish Of Creswick County Of Talbot	Former Landfill. Requires ongoing management.	0090003559
Hepburn Shire Council	CRESWICK	C/a 45a Parish Of Creswick County Of Talbot	Former Landfill. Requires ongoing management.	0090003560
Hepburn Shire Council	DAYLESFORD	47 RAGLAN ST	Current Service Station. Requires ongoing management.	0090004373
Hobsons Bay City Council	ALTONA	541 Kororoit Creek RD	Current chemical storage facility. Requires assessment and/or clean up.	0090000425
Hobsons Bay City Council	ALTONA	351 MILLERS RD	Current Industrial Site. Requires assessment and/or clean up.	0090000597
Hobsons Bay City Council	NEWPORT	Underground Section Of Petroleum Pipelines That Run Under Champion Rd	Current Industrial Site. Requires ongoing management.	0090000598
Hobsons Bay City Council	NEWPORT	Burleigh ST	Current petroleum storage site. Requires assessment and/or clean up.	0090001325
Hobsons Bay City Council	NEWPORT	Underground Section Of Petroleum Pipelines That Run Under Champion Rd	Current Industrial Site. Requires assessment and/or clean up.	0090001459
Hobsons Bay City Council	SPOTSWOOD	18 Drake ST	Current petroleum storage site. Requires assessment and/or clean up.	0090001709
Hobsons Bay City Council	ALTONA MEADOWS	306 Queen ST	Current Service Station. Requires assessment and/or clean up.	0090002186
Hobsons Bay City Council	SOUTH KINGSVILLE	38 Blackshaws RD	Former Industrial Site. Requires ongoing management.	0090002381
Hobsons Bay City Council	WILLIAMSTOWN	12 Seaview PDE	Current Industrial Site. Requires ongoing management.	0090002444
Hobsons Bay City Council	ALTONA	Elfield Meadows Estate Defined By Volume 10426	Waste Acid Sulfate Soils. Requires ongoing management.	0090002765
Hobsons Bay City Council	SPOTSWOOD	144 HALL ST	Current Industrial Site. Requires assessment and/or clean up.	0090003301
Hobsons Bay City Council	ALTONA	401 Kororoit Creek RD	Current Industrial Site. Requires assessment and/or clean up.	0090003368
Hobsons Bay City Council	ALTONA	QUEENS STREET	Former Landfill. Requires ongoing management.	0090003472
Hobsons Bay City Council	BROOKLYN	Hardie RD	Former Landfill. Requires ongoing management.	0090003487
Hobsons Bay City Council	ALTONA NORTH	Kyle RD	Former Landfill. Requires ongoing management.	0090003527

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Municipality	Suburb	Address	Issue	Notice Number
Hobsons Bay City Council	NEWPORT	Underground Section Of Petroleum Pipelines That Run Under Champion Rd	Current Industrial Site. Requires assessment and/or clean up.	0090005042
Hobsons Bay City Council	ALTONA	541 Kororoit Creek RD	Current Industrial Site. Requires assessment and/or clean up.	0090005374
Hobsons Bay City Council	SPOTSWOOD	512 Melbourne RD	Railway yard. Requires ongoing management.	0090005636
Hobsons Bay City Council	SPOTSWOOD	512 Melbourne RD	Railway yard. Requires assessment and/or clean up.	0090006054
Hobsons Bay City Council	NEWPORT	411 DOUGLAS PDE	Current petroleum storage site. Requires assessment and/or clean up.	0090006202
Hume City Council	BULLA	315 Loemans RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090000177
Hume City Council	CAMPBELLFIELD	1735 Sydney RD	Current Industrial Site. Requires assessment and/or clean up.	0090002373
Hume City Council	SOMERTON	Cliffords RD	Former Industrial Site. Requires assessment and/or clean up.	0090002446
Hume City Council	CRAIGIEBURN	Craigieburn RD	Former Landfill. Requires ongoing management.	0090003107
Hume City Council	CAMPBELLFIELD	5 REO CR	Current Industrial Site. Requires assessment and/or clean up.	0090003276
Hume City Council	CRAIGIEBURN	Craigieburn RD	Former Landfill. Requires ongoing management.	0090003475
Hume City Council	CAMPBELLFIELD	Mahoneys RD	Former Landfill. Requires ongoing management.	0090003496
Hume City Council	TULLAMARINE	Western AV	Former Landfill. Requires ongoing management.	0090003530
Hume City Council	DIGGERS REST	65 EDWARDS RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090003640
Hume City Council	CAMPBELLFIELD	Bolinda RD	Former Landfill. Requires ongoing management.	0090003793
Hume City Council	CAMPBELLFIELD	Bolinda RD	Former Landfill. Requires ongoing management.	0090003794
Hume City Council	CAMPBELLFIELD	26 GLENBARRY RD	Illegal dumping. Requires assessment and/or clean up.	0090003863
Hume City Council	Tullamarine	105 ANNANDALE RD	Illegal dumping. Requires assessment and/or clean up.	0090004149
Hume City Council	CAMPBELLFIELD	2 8 REO CR	Former chemical storage facility. Requires assessment and/or clean up.	0090004284
Hume City Council	CAMPBELLFIELD	29 HALLEY CR	Illegal dumping. Requires assessment and/or clean up.	0090004877
Hume City Council	SUNBURY	45 DEVERALL RD	Illegal dumping. Requires assessment and/or clean up.	0090005274
Hume City Council	CAMPBELLFIELD	2 8 REO CR	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090005565
Hume City Council	Tullamarine	105 ANNANDALE RD	Former Landfill. Requires assessment and/or clean up.	0090005586
Hume City Council	DIGGERS REST	250 DUNCANS LANE	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090006005
Hume City Council	WILDWOOD	420 WILDWOOD RD	Illegal dumping. Requires assessment and/or clean up.	0090006345
Kingston City Council	MOORABBIN	1 10 Ebdn ST	Former Industrial Site. Requires ongoing management.	0090002273
Kingston City Council	CLAYTON SOUTH	RYANS RD	Former Landfill. Requires ongoing management.	0090003604
Kingston City Council	CLAYTON SOUTH	Ryans RD	Former Landfill. Requires ongoing management.	0090003607
Kingston City Council	CLAYTON SOUTH	8 Elder ST	Former Landfill. Requires ongoing management.	0090003610
Kingston City Council	CHELSEA	Scotch PDE	Former Landfill. Requires ongoing management.	0090003613
Kingston City Council	DINGLEY VILLAGE	370 Old Dandenong RD	Former Landfill. Requires ongoing management.	0090003832
Kingston City Council	CLAYTON SOUTH	623 HEATHERTON RD	Former Landfill. Requires assessment and/or clean up.	0090003855
Kingston City Council	DINGLEY VILLAGE	201 SPRING RD	Former Landfill. Requires assessment and/or clean up.	0090003857
Kingston City Council	CLAYTON SOUTH	Former Clayton Road Landfill Cnr. Clayton Road & Ryans Road	Former Landfill. Requires ongoing management.	0090003966
Kingston City Council	CLAYTON SOUTH	Former Clayton Road Landfill Cnr. Clayton Road & Ryans Road	Former Landfill. Requires ongoing management.	0090004353

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Municipality	Suburb	Address	Issue	Notice Number
Kingston City Council	MENTONE	17 BALCOMBE RD	Former Service Station. Requires assessment and/or clean up.	0090004424
Kingston City Council	CLAYTON SOUTH	FRASER RD	Current landfill. Requires ongoing management.	0090006001
Knox City Council	Wantirna	750A Boronia RD	Illegal dumping. Requires assessment and/or clean up.	0090000181
Knox City Council	WANTIRNA SOUTH	CATHIES LANE CATHIES LANE	Former Landfill. Requires ongoing management.	0090000475
Knox City Council	WANTIRNA SOUTH	CATHIES LANE CATHIES LANE	Former Landfill. Requires ongoing management.	0090003738
Latrobe City Council	TRARALGON SOUTH	Loy Yang B3/4 Bartons Lane	Ash pond with a Groundwater Attenuation Zone. Requires ongoing management.	0090002894
Latrobe City Council	Hernes Oak	SPI : 9LIPP3273 PFI : 52587509	Former Landfill. Requires ongoing management.	0090005481
Latrobe City Council	MORWELL	Lot RES1 PS449978 MARYVALE ROAD	Former Landfill. Requires ongoing management.	0090006257
Macedon Ranges Shire Council	KYNETON	Redesdale (Lot 24D\PP2979) RD	Former Landfill. Requires ongoing management.	0090003557
Macedon Ranges Shire Council	BULLENGAROOK	Hobbs RD	Former Landfill. Requires ongoing management.	0090003582
Macedon Ranges Shire Council	LANCEFIELD	Baynton (Lot 16 LP208950) RD	Former Landfill. Requires ongoing management.	0090005294
Macedon Ranges Shire Council	ROMSEY	2 33 MAIN ST	Current Service Station. Requires assessment and/or clean up.	0090005361
Macedon Ranges Shire Council	WOODEND	130 High ST	Current Service Station. Requires ongoing management.	0090005669
Manningham City Council	PARK ORCHARDS	20 STINTONS RD	Illegal dumping. Requires assessment and/or clean up.	0090005987
Manningham City Council	PARK ORCHARDS	20 STINTONS RD	Illegal dumping. Requires assessment and/or clean up.	0090005988
Manningham City Council	PARK ORCHARDS	20 STINTONS RD	Illegal dumping. Requires assessment and/or clean up.	0090005989
Mansfield Shire Council	MANSFIELD	Monkey Gully RD	Former Landfill. Requires ongoing management.	0090005736
Maribymong City Council	YARRAVILLE	1 High ST	Former Industrial Site. Requires ongoing management.	0090000134
Maribymong City Council	YARRAVILLE	2A FRANCIS ST	Current Industrial Site. Requires assessment and/or clean up.	0090001122
Maribymong City Council	BROOKLYN	550 GEELONG RD	Former Industrial Site. Requires assessment and/or clean up.	0090002056
Maribymong City Council	YARRAVILLE	221 Whitehall ST	Former Industrial Site. Requires ongoing management.	0090003331
Maribymong City Council	FOOTSCRAY	Farnsworth AV	Former Landfill. Requires ongoing management.	0090003484
Maribymong City Council	MAIDSTONE	9 WILLIAMSON RD	Former Industrial Site. Requires assessment and/or clean up.	0090003767
Maribymong City Council	MAIDSTONE	9 WILLIAMSON RD	Former Industrial Site. Requires assessment and/or clean up.	0090003768
Maribymong City Council	BROOKLYN	550 GEELONG RD	Illegal dumping. Requires assessment and/or clean up.	0090004455
Maribymong City Council	WEST FOOTSCRAY	1 Graingers RD	Former chemical storage facility. Requires assessment and/or clean up.	0090004710
Maribymong City Council	YARRAVILLE	325 WHITEHALL STREET	Former Industrial Site. Requires assessment and/or clean up.	0090004781
Maribymong City Council	TOTTENHAM	1 AMANDA RD	Current chemical storage facility. Requires assessment and/or clean up.	0090004939
Maribymong City Council	BRAYBROOK	30 SOUTH RD	Former Industrial Site. Requires assessment and/or clean up.	0090005436
Maribymong City Council	YARRAVILLE	2A FRANCIS ST	Former Industrial Site. Requires assessment and/or clean up.	0090006320
Maribymong City Council	WEST FOOTSCRAY	1 Graingers RD	Former chemical storage facility. Requires assessment and/or clean up.	0090006324
Maroondah City Council	RINGWOOD EAST	18 Mount Dandenong RD	Current Service Station. Requires assessment and/or clean up.	0090001804
Melbourne City Council	PORT MELBOURNE	1 WEST GATE FWY	Current Service Station. Requires assessment and/or clean up.	0090005720

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Municipality	Suburb	Address	Issue	Notice Number
Melton Shire Council	PLUMPTON	1 Holden RD	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.	0090000159
Melton Shire Council	PLUMPTON	627 Plumpton RD	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.	0090000300
Melton Shire Council	MOUNT COTTRELL	180 Faulkners RD	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.	0090000416
Melton Shire Council	MELTON SOUTH	2 FERRIS RD	Former Landfill. Requires ongoing management.	0090003479
Melton Shire Council	MELTON SOUTH	2 FERRIS RD	Former Landfill. Requires ongoing management.	0090003480
Melton Shire Council	MELTON	Ferris RD	Former Landfill. Requires ongoing management.	0090003481
Melton Shire Council	PLUMPTON	627 PLUMPTON RD	Solid inert waste has been dumped at the site. Requires assessment and/or clean up.	0090003893
Melton Shire Council	PLUMPTON	627 PLUMPTON RD	Illegal dumping. Requires assessment and/or clean up.	0090004146
Melton Shire Council	MELTON SOUTH	2 FERRIS RD	Former Landfill. Requires ongoing management.	0090005053
Mildura Rural City Council	KOORLONG	Twentieth ST	Former Landfill. Requires ongoing management.	0090003585
Mildura Rural City Council	MILDURA	42 NINTH ST	Former petroleum storage site. Requires assessment and/or clean up.	0090004105
Mildura Rural City Council	OUYEN	48 FARRELL ST	Former petroleum storage site. Requires assessment and/or clean up.	0090004611
Mildura Rural City Council	KOORLONG	Twentieth ST	Former Landfill. Requires ongoing management.	0090005267
Mildura Rural City Council	MILDURA	CA Lot 12 & 13, ETIWANDA AV	Former Landfill. Requires ongoing management.	0090005614
Mildura Rural City Council	MILDURA	211 NINTH ST	Former petroleum storage site. Requires ongoing management.	0090005843
Mildura Rural City Council	MILDURA	220 TENTH ST	Former petroleum storage site. Requires assessment and/or clean up.	0090005846
Mildura Rural City Council	NICHOLS POINT	63 CURETON (Lot 3, LP218256) AV	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090006181
Mildura Rural City Council	NICHOLS POINT	63 CURETON (Lot 3, LP218256) AV	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090006182
Mitchell Shire Council	SEYMOUR	117 Wimple ST	Current Industrial Site. Requires assessment and/or clean up.	0090001737
Mitchell Shire Council	BROADFORD	High ST	Former Landfill. Requires ongoing management.	0090003542
Mitchell Shire Council	SEYMOUR	Lot 1\TP41415 HUME AND HOVELL ROAD	Former Landfill. Requires ongoing management.	0090003837
Moira Shire Council	YARRAWONGA	81 Channel RD	Former Landfill. Requires ongoing management.	0090003539
Moira Shire Council	YARRAWONGA	81 Channel RD	Former Landfill. Requires assessment and/or clean up.	0090003543
Moira Shire Council	YARRAWONGA	81 Channel RD	Former Landfill. Requires ongoing management.	0090003544
Moira Shire Council	NUMURKAH	Parish Of Katunga C/a 14 Sect D Naring Rd	Former Landfill. Requires ongoing management.	0090003545
Moira Shire Council	NUMURKAH	50 NARING RD	Land and/or groundwater impacted by intensive animal industry. Requires assessment and/or clean up.	0090005817
Monash City Council	GLEN WAVERLEY	310 SPRINGVALE RD	Current Industrial Site. Requires assessment and/or clean up.	0090002027
Monash City Council	OAKLEIGH	1386 Dandenong RD	Current Service Station. Requires assessment and/or clean up.	0090003887
Monash City Council	CLAYTON	1555 Centre RD	Current Industrial Site. Requires ongoing management.	0090004466
Moonee Valley City Council	MOONEE PONDS	783 Mt Alexander RD	Current Service Station. Requires assessment and/or clean up.	0090000664
Moonee Valley City Council	ASCOT VALE	556 MT ALEXANDER RD	Current Service Station. Requires assessment and/or clean up.	0090004429
Moorabool Shire Council	BACCHUS MARSH	End of Halletts WAY	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090001880
Moorabool Shire Council	MADDINGLEY	Side Of Kerrs RD	Former Landfill. Requires ongoing management.	0090003631
Moorabool Shire Council	FISKVILLE	Geelong-Ballan RD	Current Industrial Site. Requires assessment and/or clean up.	0090004570

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Moorabool Shire Council	FISKVILLE	Geelong-Ballan RD	Current Industrial Site. Requires assessment and/or clean up.	0090004571
Moreland City Council	PASCOE VALE	512 PASCOE VALE RD	Current Service Station. Requires assessment and/or clean up.	0090002542
Moreland City Council	Brunswick	225 and 227-231 Barkly Street	Former Industrial Site. Requires ongoing management.	0090004362
Moreland City Council	BRUNSWICK	225 and 227-231 Barkly Street	Former Industrial Site. Requires ongoing management.	0090004520
Moreland City Council	BRUNSWICK EAST	4 BARKLY ST	Former petroleum storage site. Requires assessment and/or clean up.	0090005833
Mornington Peninsula Shire Council	SOMERVILLE	182 Eramosa RD	Illegal dumping. Requires assessment and/or clean up.	0090000097
Mornington Peninsula Shire Council	MOUNT ELIZA	250 Moorooduc HWY	Former Landfill. Requires ongoing management.	0090000477
Mornington Peninsula Shire Council	RYE	2233 POINT NEPEAN RD	Current Service Station. Requires ongoing management.	0090000658
Mornington Peninsula Shire Council	ROSEBUD WEST	119 Truemans RD	Former Landfill. Requires ongoing management.	0090003616
Mornington Peninsula Shire Council	CRIB POINT	2 Lens ST	Former Landfill. Requires ongoing management.	0090003619
Mornington Peninsula Shire Council	MOUNT ELIZA	250 Moorooduc HWY	Former Landfill. Requires ongoing management.	0090003744
Mornington Peninsula Shire Council	CRIB POINT	The Esplanade	Former Industrial Site. Requires ongoing management.	0090006084
Mount Alexander Shire Council	Castlemaine	74 Tomkies Road Lane	Contaminated soil is retained and managed onsite. Requires ongoing management.	0090004156
Moyne Shire Council	PORT FAIRY	Badhams LANE	Former Landfill. Requires ongoing management.	0090003625
Moyne Shire Council	ALLANSFORD	5331 Great Ocean RD	Current Industrial Site. Requires ongoing management.	0090004322
Nillumbik Shire Council	PANTON HILL	165 MOTSCHALL RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090002083
Nillumbik Shire Council	PANTON HILL	165 MOTSCHALL RD	Current Industrial Site. Requires ongoing management.	0090002787
Nillumbik Shire Council	KANGAROO GROUND	105 GRAHAM RD	Former Landfill. Requires ongoing management.	0090003505
Nillumbik Shire Council	YARRAMBAT	290 Yan Yean RD	Former Landfill. Requires ongoing management.	0090006073
Nillumbik Shire Council	ELTHAM	197 Sherbourne RD	Former Industrial Site. Requires assessment and/or clean up.	0090006121
Northern Grampians Shire Council	Stawell	Tailings Storage Facility No. 2, CA1 Sec5 CA4 Sec5, CA5 Sec5, CA6 Sec5, CA18V Sec2	Current Industrial Site. Requires assessment and/or clean up.	0090005406
Northern Grampians Shire Council	STAWELL	25 Horsham RD	Former Industrial Site. Requires assessment and/or clean up.	0090005537
Northern Grampians Shire Council	Stawell	Crown Allotment 136K Parish of Illawarra	Industrial waste has been dumped at the site. Requires ongoing management.	0090006260
Northern Grampians Shire Council	Stawell	Crown Allotment 136K Parish of Illawarra	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090006261
Port Phillip City Council	ELWOOD	54A MARINE PDE	Current Service Station. Requires ongoing management.	0090005724
Shire of Nillumbik	Strathewen	120 Chadd Creek RD	Illegal dumping. Requires assessment and/or clean up.	0090006347
Southern Grampians Shire Council	PENSHURST	5188 PENSHURST-WARRNAMBOOL RD	Illegal dumping. Requires assessment and/or clean up.	0090005839
Southern Grampians Shire Council	PENSHURST	14 PENSHURST-DUNKELD RD	Current Industrial Site. Requires assessment and/or clean up.	0090006268
South Gippsland Shire Council	FOSTER	4090 SOUTH GIPPSLAND HWY	Former Landfill. Requires ongoing management.	0090003533
South Gippsland Shire Council	FOSTER	4090 SOUTH GIPPSLAND HWY	Former Landfill. Requires ongoing management.	0090003745
South Gippsland Shire Council	FOSTER	4090 SOUTH GIPPSLAND HWY	Former Landfill. Requires ongoing management.	0090003746
South Gippsland Shire Council	FOSTER	4090 SOUTH GIPPSLAND HWY	Former Landfill. Requires ongoing management.	0090003747

PRIORITY SITES REGISTER

Information as at 30 September 2015

Municipality	Suburb	Address	Issue	Notice Number
Stonnington City Council	PRAHRAN	549 HIGH ST	Current Service Station. Requires ongoing management.	0090006245
Surf Coast Shire Council	Winchelsea	84 Hopkins Street CA 33 Township of Winchelsea	Gun, pistol or rifle range. Requires assessment and/or clean up.	0090005090
Surf Coast Shire Council	Winchelsea	72 Willis Street Property Number 109990	Gun, pistol or rifle range. Requires assessment and/or clean up.	0090005952
Swan Hill Rural City Council	Swan Hill	3 Hastings Street	Current petroleum storage site. Requires assessment and/or clean up.	0090003573
Swan Hill Rural City Council	LAKE POWELL	LOT 1 TP898018, 3 BELSAR RD	Illegal dumping. Requires assessment and/or clean up.	0090004995
Swan Hill Rural City Council	LAKE POWELL	LOT 1 TP898018, 3 BELSAR RD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090005262
Swan Hill Rural City Council	PENTAL ISLAND	LOT 4IPS537291, 1411 PENTAL ISLAND ROAD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090006076
Towong Shire Council	BETHANGA	4 MARTIN ST	Former Landfill. Requires ongoing management.	0090003554
Warrnambool City Council	WARRNAMBOOL	Braithwaite ST	Former Landfill. Requires ongoing management.	0090003637
Wellington Shire Council	TRARALGON	Loy Yang Switchyard Bartons LANE	Ash pond with a Groundwater Attenuation Zone. Requires ongoing management.	0090002893
Wellington Shire Council	YARRAM	Off Yarram-Traralgon RD	Former Landfill. Requires ongoing management.	0090003055
Wellington Shire Council	LONGFORD	746 LONGFORD-LOCH SPORT RD	Former Landfill. Requires ongoing management.	0090003791
Wellington Shire Council	LONGFORD	746 LONGFORD-LOCH SPORT RD	Former Landfill. Requires ongoing management.	0090003792
Whitehorse City Council	BLACKBURN	24 Blackburn RD	Former Service Station. Requires assessment and/or clean up.	0090003153
Whitehorse City Council	BOX HILL	14 Federation ST	Former Landfill. Requires ongoing management.	0090003499
Whitehorse City Council	BLACKBURN	2 CENTRAL RD	Former Service Station. Requires assessment and/or clean up.	0090004262
Whittlesea City Council	THOMASTOWN	342 Settlement RD	Former Service Station. Requires assessment and/or clean up.	0090001959
Whittlesea City Council	EPPING	500 Cooper ST	Former Landfill. Requires ongoing management.	0090003490
Whittlesea City Council	EPPING	490 COOPER ST	Former Landfill. Requires ongoing management.	0090003502
Whittlesea City Council	THOMASTOWN	240 HIGH ST	Former Service Station. Requires assessment and/or clean up.	0090004077
Whittlesea City Council	THOMASTOWN	51 High ST	Current Industrial Site. Requires assessment and/or clean up.	0090004421
Whittlesea City Council	WHITTLESEA	125 HOLTS ROAD	Industrial waste has been dumped at the site. Requires assessment and/or clean up.	0090005750
Whittlesea City Council	EPPING	215 COOPER ST	Former Landfill. Requires ongoing management.	0090006070
Wodonga Rural City Council	WODONGA	3437 Beechworth-Wodonga RD	Former Landfill. Requires ongoing management.	0090003548
Wyndham City Council	Laverton North	19 Little Boundary RD	Current Industrial Site. Requires assessment and/or clean up.	0090000003
Wyndham City Council	LAVERTON NORTH	41 LEAKES RD	Former Industrial Site. Requires assessment and/or clean up.	0090000864
Wyndham City Council	LAVERTON NORTH	19 LITTLE BOUNDARY RD	Current Industrial Site. Requires assessment and/or clean up.	0090003318
Wyndham City Council	LAVERTON NORTH	41 LEAKES RD	Former Industrial Site. Requires ongoing management.	0090003389
Wyndham City Council	LITTLE RIVER	490 EDGARS RD	Illegal dumping. Requires assessment and/or clean up.	0090004276
Wyndham City Council	LAVERTON NORTH	103 Pipe RD	Current Industrial Site. Requires assessment and/or clean up.	0090004912
Yarra City Council	RICHMOND	3-21a Kent St 1/4-14/4 Little Buckingham St	Former Industrial Site. Requires ongoing management.	0090001920
Yarra City Council	FITZROY NORTH	433 SMITH ST	Former Industrial Site. Requires ongoing management.	0090004363
Yarra Ranges Shire Council	KILSYTH	1 76 Fussell RD	Former Industrial Site. Requires assessment and/or clean up.	0090000004
Yarra Ranges Shire Council	KILSYTH	2 76 Fussell RD	Former Industrial Site. Requires assessment and/or clean up.	0090000005

PRIORITY SITES REGISTER

Information as at 30 September 2015

Municipality	Suburb	Address	Issue	Notice Number
Yarra Ranges Shire Council	KILSYTH	1 76 Fussell RD	Former Industrial Site. Requires assessment and/or clean up.	0090000006
Yarra Ranges Shire Council	KILSYTH	2 76 Fussell RD	Former Industrial Site. Requires assessment and/or clean up.	0090000007
Yarra Ranges Shire Council	COLDSTREAM	Ingram RD	Former Landfill. Requires ongoing management.	0090003838
Yarra Ranges Shire Council	COLDSTREAM	Ingram RD	Former Landfill. Requires ongoing management.	0090003839
Yarra Ranges Shire Council	HEALESVILLE	Mt Riddel RD	Former Landfill. Requires ongoing management.	0090003840
Yarra Ranges Shire Council	HEALESVILLE	Mt Riddel RD	Former Landfill. Requires ongoing management.	0090003841

**PRELIMINARY ENVIRONMENTAL SITE
ASSESSMENT -
HEIDELBERG YARRA VALLEY WATER
RESERVOIR,
421 UPPER HEIDELBERG ROAD,
HEIDELBERG, VICTORIA**

Prepared for:

Andrew Sells
Foresite Pty Ltd
Level 10, 350 Queen Street,
Melbourne, Victoria 3000

Report Date: 18 October 2007
Project Ref: ENVIABTF08621AA

Written/Submitted by:



Richard Bowers
Environmental Scientist

Reviewed/Approved by:



Paul Moritz
Principal Environmental Scientist

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1 INTRODUCTION

1.1 General

Foresite Pty Ltd (Foresite) contracted Coffey Environments Pty Ltd (Coffey) to conduct a Preliminary Environmental Site Assessment (ESA) of the Heidelberg Yarra Valley Water (YVW) Reservoir site located at 421 Upper Heidelberg Road, Heidelberg, Victoria (the site).

The site comprised largely of an above-ground 30ML reservoir tank with associated pipework and infrastructure to the south of the site. The tank was decommissioned and intact at the time of this assessment. Information from YVW indicated that the reservoir and associated pipework infrastructure were disconnected from the mains water supply. A telecommunications distribution facility existed to the north of the site.

It is understood that the Heidelberg reservoir site is considered surplus to YVW's operational requirements and, in line with State Government land disposal policy, must be rezoned and disposed of with the key requirement to optimise returns from the sale of the property. As such, it is understood that a Preliminary ESA was required to assess the site for potential contamination and its suitability for future sensitive uses (including residential), in order to support a planning scheme amendment for residential use.

1.2 Objectives

The objective of this assessment was to assess the site for potential contamination and its suitability for future sensitive uses, including residential.

2 BACKGROUND INFORMATION

References to this report are cited in Appendix A.

2.1 Site Identification

The site was located at 421 Upper Heidelberg Road, Heidelberg, Victoria. The site had a total area of approximately 6,999 m² and was zoned Public Use Zone – Service and Utility (PUZ1) under the Banyule City Council planning scheme. A copy of the Banyule City Council property report is presented in Appendix D. The site comprised largely of a decommissioned covered above-ground 30ML reservoir tank with associated pipework and infrastructure to the south of the site. Information from YVW indicated that the reservoir and associated pipework infrastructure was disconnected from mains water supply. A telecommunications distribution facility existed to the north of the site.

2.2 Site Location

The location of the site is shown in Figure 1, and a site features plan is presented in Figure 2.

Details relating to the general land use and primary features surrounding the site are summarised below.

- Adjacent and surrounding land use was considered as residential, recreational and commercial.
- The site was situated on the top of a hill, with a slope to the south west of approximately 1:50m.
- The closest surface water bodies included Salt Creek, located 1.3 km east of the site, which flows into the Yarra River, located 1.5 km east of the site; and Darebin Creek, located 1.9 km west of the site.
- The Austin Hospital was located across Upper Heidelberg Road to the east of the site.

2.3 Site Features

Photographs of the site are presented in Appendix E. Site features, including the subject site boundary, are shown on Figure 2 and summarised as follows:

- The site consisted of a large 30 ML decommissioned, intact, covered, above-ground reservoir tank;
- Underground pipework, and infrastructure including a settling tower associated with the reservoir, were located on the southern part of the site. Information from Yarra Valley Water indicated that the reservoir and infrastructure had been disconnected from mains water supply. Mains water supply entered the site to the south and was diverted in 2004 through a series of velocity-reducing valves in the far southern portion of the site, south of the settling tower (see Photo 2, Appendix E).
- The reservoir tank was based between approximately 1.5 – 3 metres below natural ground surface. A stone retaining wall surrounded the entire reservoir tank, except for the south western tank wall, which faced an open gravelled area leading up to the south western entrance to the site.
- To the north east of the reservoir tank, a groundwater monitoring well existed between the base of the reservoir tank and the retaining wall.

Adjacent Land Use:

Adjacent and surrounding land use was considered to be residential, commercial and recreational with the following occupants:

- To the north, a telecommunications distribution facility adjoined the site, consisting of three small buildings and a telecommunications tower. A carpark was located over Bell Street to the north, with residential and commercial properties beyond;
- To the east, over Upper Heidelberg Road: Austin Hospital (to the east) and residential properties;
- To the south: A playground, including a sealed basketball court, bordered the site to the south east, and residential properties existed over Forster Street; and
- To the west, over an access alleyway: Residential properties.

2.4 Chronology of Site Activities

Information from historical aerial photographs, historical titles and YVW records were reviewed as part of this assessment. Historical titles are presented in Appendix B, aerial photos in Appendix C, and YVW records in Appendix F. Based on the results of these searches, a chronological summary of the history of the site and surrounding areas is presented in Table A, and is summarised below.

Historical land use of the site:

- From 1880 to 1910 the site and surrounding land was privately owned by various landholders, including a sheep farmer and grazier.
- In 1910 a portion of this land which now largely covers the site was purchased by The Melbourne Metropolitan Board of Works.
- In 1911 a 1,000,000 Gallon reservoir was built in the south eastern corner of the site, formerly extending over the current playground area and the southern portion of the current tank. YVW historical plans indicate that the former tank extended approximately 2 m below natural ground surface, and was mounded at the edges to a height of approximately 2 m above natural ground surface.
- In 1957, The Melbourne Metropolitan Board of Works purchased a portion of land from the residential property to the north of the site.
- During the mid-1950's the former tank was demolished, and by 1959 the current tank was constructed and commenced operation. A workshop/storage area building and office/house was later constructed in the south eastern portion of the site, positioned in the area now occupied by the adjoining playground.
- In 1993, the land to the immediate north of the site was subdivided and cleared for the construction of the Bell Street – Banksia Street link (Upper Heidelberg Road underpass).
- In 1996, the site was sub-divided into two lots on the plan of subdivision PS349641N: Lot 1 including the subject site, and Lot 2 being the existing playground and basketball court reserve. The reservoir workshop/storage area and office/house formerly located on the playground area was demolished later than 1989.
- In 2004, YVW ceased operation of the reservoir facility. Mains water was diverted from the reservoir and associated infrastructure through two velocity-reducing valves in the far south of the site (south of the settling tower) in 2005.

**PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT
HEIDELBERG YARRA VALLEY WATER RESERVOIR
UPPER HEIDELBERG ROAD, HEIDELBERG**

Discussion with a YVW representative yielded the following information:

- The basketball court located in the adjoining playground (off-site) has been built over the foundations of the former reservoir workshop/storage area building. Pipe fittings, maintenance equipment and petroleum storage drums were formerly stored within this workshop.
- Stockpiles of imported fill material were stored to the rear of the site, in the location of the telecommunications facility. These stockpiles of soil were sourced from excavated material around broken pipes and areas requiring underground maintenance around the district.
- Steel pipes were formerly stored on railway sleepers in the rear yard, in the vicinity of the telecommunications facility, and on a concrete slab located near the south western wall of the tank.
- The tower located in the south of the site, known as the "settling tower", was used to generate water pressure for the distribution of water to the surrounding area.

Potentially Contaminating Activities:

Based on the historical land use on the site and surrounding properties, there is a potential for contaminating activities to have occurred, particularly on the properties to the south east of the site where the former workshop/storage area was located, and within the site itself, particularly at the north western corner. Such activities may relate to (but are not limited to):

- Past storage of petroleum in drums along with maintenance equipment and pipe fittings within the former workshop to the south east of the site (where the basketball court is located).
- Past importation and storage of stockpiled fill material at the north western corner of the site, adjacent to the telecommunications facility (as indicated on Figure 2). Scattered asbestos cement sheeting fragments were also observed in this area to the north and north-west of the site (as indicated on Figure 2).
- Potential importation of fill material for the construction of the former banked reservoir, previously existing in the south eastern corner of the site.
- Potential past use of pesticides and herbicides.
- The Austin Hospital, located across Upper Heidelberg Road, previously contained a briquette-fired boiler, where there may have been a potential for the scattering of ashes around the surrounding (then) vacant properties. However this is considered to be of low risk.

EPA Priority Sites Register

The site was not listed on or in the vicinity of a site listed on the Victorian EPA Priority Site Register.

Leaks and Spills:

Coffey Environments was not aware of any recorded leaks or spills associated with the site.

Previous, Present and Proposed Zoning and Land use:

- From the aerial photographs and site history, the site appears not to have been in use other than for water storage and distribution, or possible earlier rural purposes.
- The site is currently zoned Public Use Zone (PUZ1) under the Banyule City Council planning scheme.
- The site is proposed to be developed for residential landuse.

Previous Environmental Reports

Coffey Environments were not aware of any previous environmental reports associated with the site.

2.5 Site Equipment

The site consists of a decommissioned 30ML covered above-ground reservoir tank. Associated underground pipework and infrastructure was located to the south of the tank, and included a settling tower. In 2004 the reservoir and all associated infrastructure was disconnected from mains water supply, which was diverted on-site through 2 velocity-reducing valves. YVW records of the current and past equipment are presented in Appendix F.

A telecommunications distribution facility existed to the north of the site, including three small buildings and a distribution tower.

2.6 Regional Geology

The geology of the site as mapped on the 1:250,000 Geological Survey of Victoria, Melbourne Map appears as Miocene to Pliocene fluvial gravel, sand and silt of the Brighton Group formation.

During the excavation works conducted during this investigation, cemented coarse grain sands were encountered across the site to a maximum investigation depth of 1.6 metres below ground surface (mbgs). This was consistent with the regional formation outlined above.

2.7 Regional Hydrogeology

The closest local surface water bodies are Salt Creek, approximately 1.3 km east of the site, which flows into the Yarra River, located 1.5 km east of the site; and Darebin Creek, located approximately 1.9 km west of the site. An inspection of the Groundwater Resources of Victoria 1:100 000 map revealed that the site is situated in the Port Phillip Basin above an aquifer of between 3000 to 7000 mg/L Total Dissolved Solids, and is suitable for all stock watering except for poultry.

One groundwater monitoring well was noted to be on-site adjacent to the north eastern wall of the reservoir tank. The standing water level was gauged at 11.03 mbgs.

A search of the Department of Primary Industries website indicated that one registered groundwater bore was located within a 1 km radius of the site. The bore was located approximately 420 m east of the site and had a measured depth of 33 m.

3 SOIL ASSESSMENT

3.1 Soil Sampling

Prior to the onsite field assessment works commencing, a review of underground services was undertaken, including a review of Melbourne One Call Services (MOCS) asset plans relevant to the site and surrounds. A site walkover was also conducted prior to this by a Coffey Environments field scientist and a YVW representative, to confirm sampling locations.

The field assessment was carried out on 19 September 2007 and involved the collection of samples from eight (8) test pit locations using a 1.5 tonne excavator. The sample locations were marked out across the site as shown on Figure 3.

Samples were collected from depths of 0.2m, 0.5m, and 1.0m. A duplicate and a triplicate sample was also collected for quality control purposes.

Each soil sample was screened in the field using a Photo-Ionisation Detector (PID) to test for the presence of volatile hydrocarbons, such as petroleum vapours. Field screening results are displayed on the soil test pit logs presented in Appendix G.

The geology encountered in each soil test pit was logged by a field scientist. Copies of the soil test pit logs are included in Appendix G.

All soil samples were transferred to glass jars (250mL) and immediately sealed, uniquely labelled, placed in eskies with ice packs and dispatched for analysis to the laboratories under standard chain-of-custody documentation procedures.

3.2 Laboratory Analysis

Soil samples were analysed by MGT Environmental Consulting Pty Ltd (MGT), a NATA registered laboratory. The inter laboratory sample was sent to ALS Environmental (ALS).

A total of eight (8) samples (one surface sample per sampling location) were submitted to the laboratory and analysed for the following:

- Metals (antimony, arsenic, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, tin and zinc);
- Semi-Volatile organic compounds: PAHs; Organochlorine pesticides (OCs) and Organophosphorus pesticides (OPs); and polychlorinated biphenyls (PCBs);
- Total Petroleum Hydrocarbons (TPH); and
- Asbestos fibres.

In addition, one duplicate sample, one split (triplicate) sample, one trip blank sample and one rinsate sample were collected.

The duplicate and split samples were analysed for the above list of analytes. An equipment rinsate sample was analysed for PAHs and metals.

The laboratory reports are presented in Appendix H and copies of all chain-of-custody records for the soil samples are included in Appendix I.

3.3 RESULTS

3.3.1 Site Soil Assessments Criteria

Based on the future proposed land use of the site, the analytical results were compared against a set of adopted criteria, namely the National Environment Protection Measure (NEPM 1999) Health Investigation Levels (HILs) for high density residential with limited access to soil; (referred to as NEPM HIL-D criteria).

Consideration was also given to the NEPM (1999) Ecological Investigation Levels (EILs) which are based on phytotoxicity and soil survey data from urban residential properties in four Australian capital cities. Where NEPM (1999) does not offer criteria, suitable criteria were sourced from other Australian or International bodies.

NEPM (1999) does not offer criteria for TPH and solvents. In this case, TPH results were compared to NSW EPA sensitive land use criteria from the document NSW EPA (1994) Guidelines for Assessing Service Station Sites.

3.3.2 Soil Analytical Results

A total of eight (8) individual primary samples from the 8 test pits were submitted to the laboratory with all samples being analysed as detailed in section 3.2. The results are presented in Tables 1 – 4, laboratory certificates in Appendix H and chain of custody documentation in Appendix I.

The results of the primary soil sample analyses indicated all samples tested reported concentrations below HILs and NSW EPA (1994) Guidelines.

Nickel was detected in concentrations above the EILs in surface samples collected from SB1, SB4, SB5, SB7 and SB8. All other analytes reported concentrations below the adopted EILs.

Concentrations of PAHs were detected in the surface sample at SB5 (located in the north western corner of the site). However, total PAH and benzo(a)pyrene concentrations were below the adopted criteria.

Asbestos fibres were not detected in any surface sample for which asbestos was analysed.

3.4 QUALITY ASSURANCE AND QUALITY CONTROL

3.4.1 QC Results

Field QC Results

Data validation of analytical results from the duplicate and triplicate samples were carried out by calculation of the relative percent differences (RPD) from the mean, i.e. the difference between the primary and duplicate sample results divided by the average of the two results and expressed as a percentage. Results of QC intra-laboratory duplicate sample, analysed by the primary laboratory (MGT), are presented though out each table as QC1 - RPD%; Results of QC inter-laboratory triplicate sample, analysed by the secondary laboratory (ALS), are also presented throughout each table as QC2 - RPD% with a copy of the NATA endorsed reports included in Appendix H.

One rinsate sample (QC3) was analysed for PAHs and metals. The QC results are presented in Tables 1 – 5.

Intra-laboratory Duplicates

One intra-laboratory duplicate sample was analysed for metals, TPH, PAHs, OCs/OPs, PCBs and asbestos. RPD values were in the range of 0-67%, with 3 RPD values (benzo(a)pyrene – 67%, benzo(g,h,i)perylene – 67% and lead – 56%) exceeding the Standards Australia (2005) recommended range of 0-50%.

Inter-laboratory Duplicates

One inter-laboratory duplicate sample was analysed for metals, TPH, PAHs, OC's/OP's, and PCBs. RPD values were in the range of 0-86%, with 4 RPD values (benz(a)anthracene – 67%, chrysene – 67%, fluoranthene – 86% and pyrene – 86%) exceeding the Standards Australia (2005) recommended range of 0-50%.

Laboratory QC Results

MGT and ALS also conducted an internal QC program comprising laboratory blanks, matrix duplicates and spikes on sample matrices and laboratory blanks (refer Appendix H). None of the reported RPDs between laboratory matrix duplicates were outside the acceptable range of 50% (Standards Australia, 1997).

The results of laboratory blanks were below detection limits indicating that no sample contamination had occurred as a result of handling in the laboratory.

Spiked sample analyses reported no results outside the acceptable control limits (70% to 130%).

These results are considered acceptable to validate the analytical dataset.

3.4.2 QC Conclusions

A review of the available information indicated the QC program and assessment was consistent with AS4482.1 (2005).

Elevated RPDs can often be influenced by minor differences between relatively low concentrations (as demonstrated in this case) and/or sample heterogeneity commonly observed in fill material. The elevated RPD values between the intra and inter-laboratory QC samples and the primary samples were not considered to affect the integrity of the results as the highest concentration has been adopted (as a conservative measure) as the representative sample.

The review of the QC data generated during the field investigation indicated the soil data obtained was adequate for the purpose of this assessment. It is considered that the overall quality of the data is sufficient to support the findings of this report.

4 CONCLUSIONS AND RECOMENDATIONS

Coffey Environments undertook a Preliminary ESA at the Heidelberg Yarra Valley Water Reservoir site located at 421 Upper Heidelberg Road, Heidelberg, Victoria. At the time of this assessment, the site was zoned Public Use 1 Zone (PUZ1) within the Banyule City Council planning scheme.

A site history search revealed that the site had remained as a property largely covered by a reservoir tank since 1910, prior to which it was part of a larger property owned by various landholders including a sheep farmer and grazier. The original reservoir tank was replaced with the current larger tank in 1959, where additional infrastructure including a settling tower, workshop/storage area and office/house were since built to the south of the site, and steel pipes and imported stockpiled material were stored to the west and north-west of the site.

The site was not listed on or in the vicinity of a site listed on the Victorian EPA Priority Site Registry.

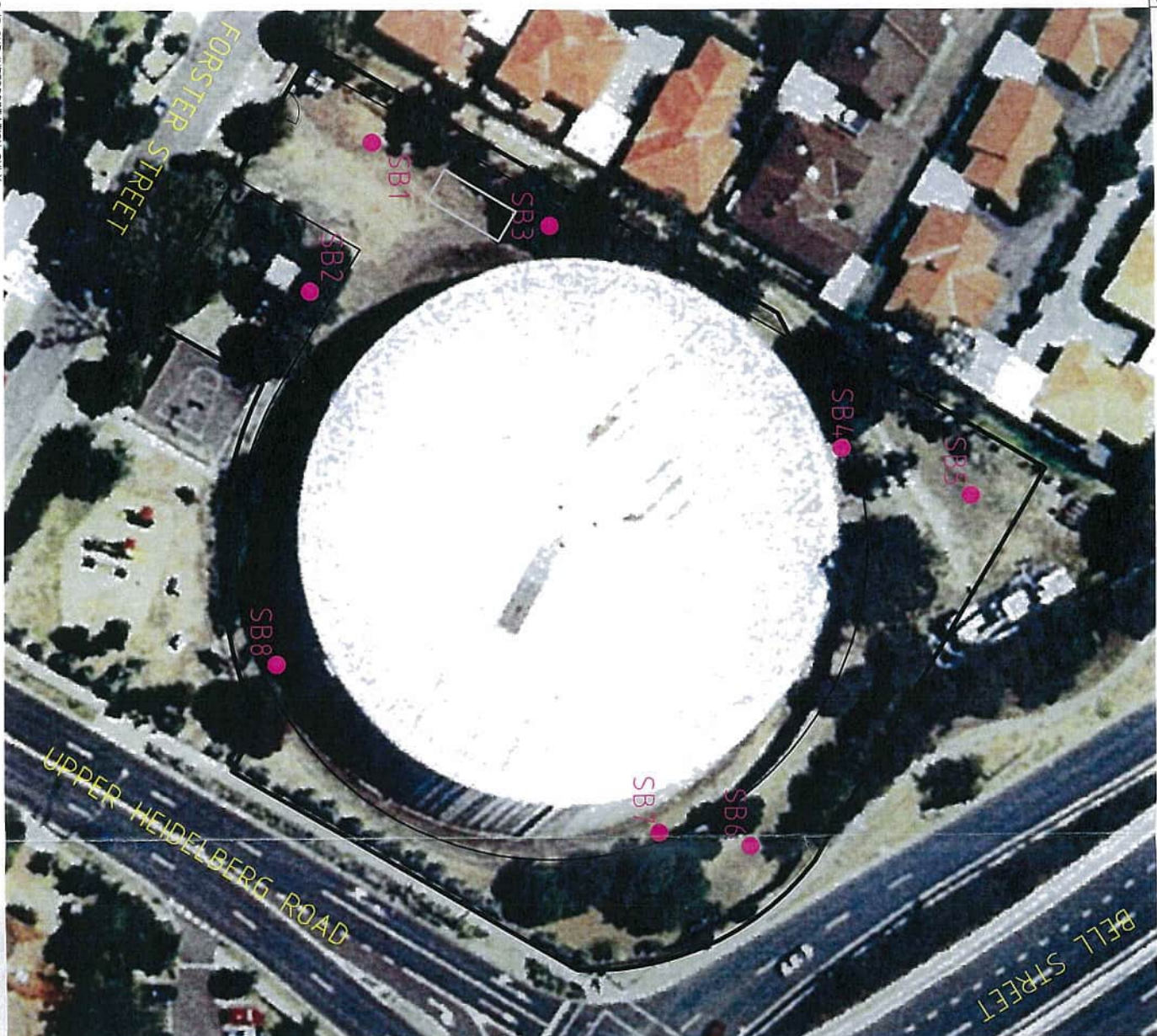
Potentially contaminating activities included the past storage of petroleum drums along with maintenance equipment and pipe fittings within the former workshop to the south-east of the site (off-site, where the basketball court is currently located). SB2 was located as close as practicable to this location (and down-gradient), and no impact was observed in the test pit, nor detected in the surface sample analysed.

The results of the soil analyses indicated all samples tested reported concentrations below the adopted criteria, except for nickel, detected in concentrations above the adopted EILs in surface samples collected from SB1, SB4, SB5, SB7 and SB8. These results were consistent with the nickel concentrations normally found in sites to the north and west of Melbourne, however it may also have the potential to be attributed to the upper fill material encountered on site. Although potentially affecting plant growth, these concentrations were not considered to preclude the use of the site for residential purposes, as they did not exceed the adopted human health-based criteria (HILs).

Although the adopted criteria was based on future proposed land use for high-density residential, it can also be noted that the concentrations detected on site during this assessment did not exceed the more sensitive criteria for standard residential with garden/accessible soil (referred to as NEPM HIL-A criteria).

Based on the results of this Preliminary ESA, Coffey Environments concludes the following:

- Based on the sampling and analysis results, the soil conditions were consistent with those that would be considered suitable for residential landuse. However, should soil later be removed from the site, further sampling will be required to appropriately classify the material in accordance with the EPA Publication 448.3 – *Classification of Wastes* (2007) prior to disposal.
- It is highly recommended that upper fill layers containing fragmented asbestos cement sheeting to the north of the site be removed prior to development.
- The site assessment has been based on a limited number of assessment locations. Due to the potentially variable nature of fill material, should materials be encountered during excavations that are not similar to those observed during this assessment, further investigation and analysis may be required.
- This assessment has not considered soil located beneath the existing reservoir tank. Should the base of the tank be removed, further soil assessment will be recommended.
- This assessment has not considered impact to groundwater.



LEGEND

SB
SAMPLING POINTS



NOTE:
ALL LOCATIONS ARE APPROXIMATE.
DIMENSIONS IN METRES.

Coffey Environment Pty Ltd ©

Rev	Date	Revision Details	Dim
A	09.10.07	ESA ISSUE	L2

coffey
environments

126 Trenerry Crescent
Abbotsford VIC 3067
Ph: (03) 9473 1400
And WORKING PLACES Fax: (03) 9473 1460

Client:

FORESITE PTY LTD

Project:

**HEIDELBERG RESERVOIR
PRELIMINARY ESA**

Location:

**UPPER HEIDELBERG ROAD
HEIDELBERG, VICTORIA**

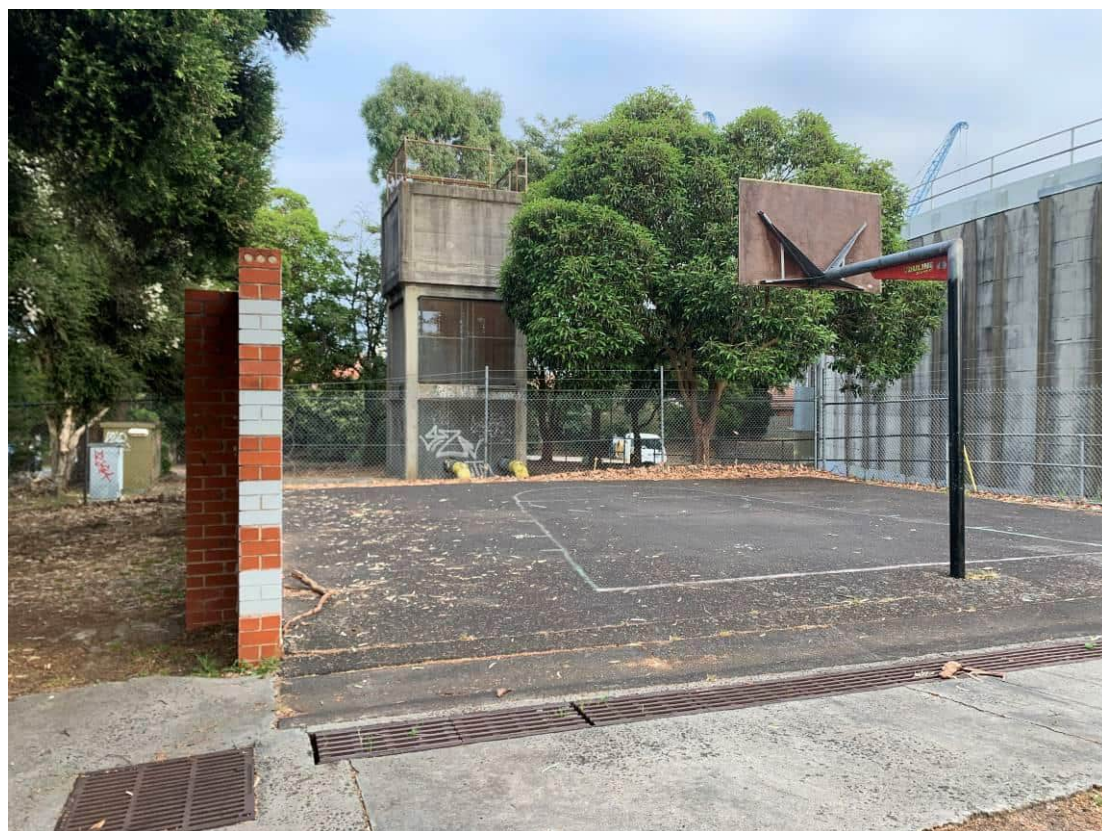
Drawing Title:

SAMPLING PLAN

Drawn	Signed	Date
L2		09.10.07
Checked	Signed	Date
Project - Drawing No.	Figure No.	Rev.
ENVIA9TF0821AA-001	3	A



APPENDIX E SITE PHOTOGRAPHS

Photograph 1	Description: Basketball court (former garage and storage shed area)
Photo taken: RG	Date: 06/02/2023



Photograph 2	Description: Decommissioned Settling Tower
Photo taken: RG	Date: 06/02/2023





Photograph 3	Description: Hardstand Area west of tank
Photo taken: RG	Date: 06/02/2023
	
Photograph 4	Description: Southeast of site (public park) looking northeast
Photo taken: RG	Date: 06/02/2023
	

Photograph 5	Description: Redundant water tank infrastructure
Photo taken: RG	Date: 06/02/2023



Photograph 6	Description: southwest of site looking north towards water tank
Photo taken: RG	Date: 06/02/2023



Photograph 7	Description: South east of site (looking northeast) towards water tank retaining wall
Photo taken: RG	Date: 6/02/2023
	
Photograph 8	Description: Suspected ACM observed at surface in northwest corner of site
Photo taken: RG	Date: 06/02/2023
	

APPENDIX F BOREHOLE LOGS

Engineering Log - Borehole

client: **Development Victoria**

principal:

project: **421 Upper Heidelberg Road, Ivanhoe - Proposed Development**

location: **421 Upper Heidelberg Road, Ivanhoe**Borehole ID. **BH1**

sheet: 1 of 2

project no. **754-MELGE309933**

date started: **06 Feb 2023**

date completed: **06 Feb 2023**

logged by: **BZ**

checked by: **RCD**

position: E: 328645; N: 5819427 (GDA2020(MGA) Zone 55) surface elevation: Not Specified

angle from horizontal: 90°

drill model: DB8, Track mounted

drilling fluid: Water

hole diameter : 100 mm

drilling information					material substance							
method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
HA	1 2 3								M	F	100 200 300 400	TOPSOIL
AD								FILL: Sandy CLAY : medium plasticity, dark brown, fine to coarse grained sand, with rootlets, trace fine grained gravel.				FILL
			E					FILL: Sandy CLAY : medium plasticity, dark brown, fine to coarse grained sand, trace fine grained gravel.				
			E		1.0			FILL: Sandy CLAY : medium plasticity, dark brown, fine to coarse grained sand, with fine to coarse grained gravel.				
			E					FILL: Sandy CLAY : high plasticity, orange brown, fine to coarse grained sand, trace fine grained gravel.		VSt		
			SPT-E 6, 7, 7 N*=14		2.0			becoming dark brown, mottled pale grey				
								becoming dark brown, mottled black				
			E									
			SPT-E 3, 6, 7 N*=13		3.0			FILL: Sandy CLAY : high plasticity, red brown, dark brown, dark grey mottled black, fine to medium grained sand.				
			E					Borehole BH1 continued as cored hole				
					4.0							
					5.0							
					6.0							
					7.0							

method

DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g.
B blank bit
T TC bit
V V bit

support

M mud
C casing

penetration

no resistance ranging to refusal

water

10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests

B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remoulded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition

D dry
M moist
W wet
Wp plastic limit
WI liquid limit

consistency / relative density

VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense



Engineering Log - Cored Borehole

client: **Development Victoria**

principal:

project: **421 Upper Heidelberg Road, Ivanhoe - Proposed Development**

location: **421 Upper Heidelberg Road, Ivanhoe**

Borehole ID. **BH1**

sheet: 2 of 2

project no. **754-MELGE309933**

date started: **06 Feb 2023**

date completed: **06 Feb 2023**

logged by: **BZ**

checked by: **RCD**

position: E: 328645; N: 5819427 (GDA2020(MGA) Zone 55) surface elevation: Not Specified

angle from horizontal: 90°

drill model: DB8, Track mounted

drilling fluid: Water

hole diameter: 100 mm

drilling information				material substance				rock mass defects			
method & support	water	RL (m)	depth (m)	graphic log	material description ROCK TYPE: grain characteristics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 X = axial O = diametral a = axial d = diametral	samples, field tests & Is(50) (MPa) a = axial d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particulargeneral
			1.0								
			2.0								
			3.0								
			4.0		started coring at 3.60m NO CORE: 0.40 m becoming dark brown						
			5.0		FILL: CONCRETE						
			6.0		NO CORE: 2.12 m						
			7.0		CLAYEY SAND (SC): fine to coarse grained, rounded, red brown, pale grey.			SPT 3, 3, 8 N=11			
					Borehole BH1 terminated at 6.70 m Safety reasons						


method DT diatube NMLCNMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) RR rock roller	support C casing M mud N none water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown	graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)	weathering & alteration* RS residual soil XW extremely weathered HW highly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high	defect type PT parting JT joint SS sheared surface SZ sheared zone CO contact CS crushed seam SM seam roughness VR very rough RO rough SO smooth POL polished SL slickensided	planarity PL planar CU curved UN undulating ST stepped IR irregular coating CN clean SN stained VN veneer CO coating
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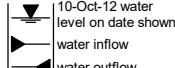
Engineering Log - Borehole

Borehole ID. **BH1A**
 sheet: 1 of 3
 project no. **754-MELGE309933**
 date started: **07 Feb 2023**
 date completed: **07 Feb 2023**
 logged by: **BZ**
 checked by: **RCD**

client: **Development Victoria**
 principal:
 project: **421 Upper Heidelberg Road, Ivanhoe - Proposed Development**
 location: **421 Upper Heidelberg Road, Ivanhoe**

position: E: 328639; N: 5819426 (GDA2020(MGA) Zone 55) surface elevation: Not Specified angle from horizontal: 90°
 drill model: DB8, Track mounted drilling fluid: Bentonite hole diameter : 100 mm

drilling information						material substance						
method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD CASING	1 2 3		SPT 4, 8, 7 N*=15		0.0			FILL: Sandy CLAY : medium plasticity, dark brown, fine to coarse grained sand, trace fine grained gravel, with rootlets. FILL: Sandy CLAY : medium plasticity, dark brown, fine to coarse grained sand, with fine to coarse grained gravel. FILL: Sandy CLAY : high plasticity, red brown, fine to coarse grained sand, trace fine grained gravel. becoming orange brown, dark brown, dark grey, trace coarse grained gravel becoming dark brown, mottled orange brown, pale grey	M	F	100 200 300 400	TOPSOIL FILL Topsoil
					1.0							
					2.0							
			SPT 3, 5, 4 N*=9		3.0					VSt		
					4.0			Borehole BH1A continued as cored hole				
					5.0							
					6.0							
					7.0							

method DT diatube AD auger drilling* AS auger screwing* HA hand auger W washbore RR rock roller * bit shown by suffix e.g. AD/T B blank bit T TC bit V V bit	support M mud C casing penetration  water 	samples & field tests B bulk disturbed sample D disturbed sample E environmental sample SS split spoon sample U## undisturbed sample ##mm diameter HP hand penetrometer (kPa) N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone VS vane shear; peak/remoulded (kPa) R refusal HB hammer bouncing	soil group symbol & material description based on AS 1726:2017 moisture condition D dry M moist W wet Wp plastic limit WI liquid limit	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
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Engineering Log - Cored Borehole

client: **Development Victoria**

principal:

project: **421 Upper Heidelberg Road, Ivanhoe - Proposed Development**

location: **421 Upper Heidelberg Road, Ivanhoe**

Borehole ID. **BH1A**

sheet: 2 of 3

project no. **754-MELGE309933**

date started: **07 Feb 2023**

date completed: **07 Feb 2023**

logged by: **BZ**

checked by: **RCD**

position: E: 328639; N: 5819426 (GDA2020(MGA) Zone 55) surface elevation: Not Specified

angle from horizontal: 90°

drill model: DB8, Track mounted

drilling fluid: Bentonite

hole diameter: 100 mm

drilling information				material substance				rock mass defects			
method & support	water	RL (m)	depth (m)	graphic log	material description ROCK TYPE: grain characteristics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 X = axial O = diametral a = axial d = diametral	samples, field tests & Is(50) (MPa) a = axial d = diametral	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other)
			1.0								
			2.0								
			3.0								
			4.0		started coring at 3.40m CONCRETE. NO CORE: 0.50 m						FILL rod drops
			5.0		CONCRETE. NO CORE: 0.85 m						150 mm concrete recovered only
			6.0		CLAYEY SAND (SC): fine to coarse grained, rounded, red brown, orange brown. NO CORE: 1.20 m			SPT 7, 7/50mm HB N*=R			BRIGHTON GROUP
			7.0		CLAYEY SAND (SC): fine to coarse grained, rounded, red brown, orange brown.			SPT 7/80mm HB N*=R			
					NO CORE: 0.20 m						
method DT diatube NMLCNMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) RR rock roller				support C casing M mud N none water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown				graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)			
				weathering & alteration* RS residual soil XW extremely weathered HW highly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high				defect type PT parting JT joint SS sheared surface SZ sheared zone CO contact CS crushed seam SM seam planarity PL planar CU curved UN undulating ST stepped IR irregular roughness VR very rough RO rough SO smooth POL polished SL slickensided coating CN clean SN stained VN veneer CO coating			

Engineering Log - Cored Borehole

 client: **Development Victoria**

principal:

 project: **421 Upper Heidelberg Road, Ivanhoe - Proposed Development**

 location: **421 Upper Heidelberg Road, Ivanhoe**

 Borehole ID: **BH1A**

sheet: 3 of 3

 project no: **754-MELGE309933**

 date started: **07 Feb 2023**

 date completed: **07 Feb 2023**

 logged by: **BZ**

 checked by: **RCD**

position: E: 328639; N: 5819426 (GDA2020(MGA) Zone 55) surface elevation: Not Specified

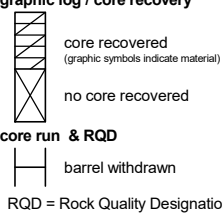
angle from horizontal: 90°

drill model: DB8, Track mounted

drilling fluid: Bentonite

hole diameter: 100 mm

drilling information				material substance				rock mass defects											
method & support	water	RL (m)	depth (m)	graphic log	material description ROCK TYPE: grain characteristics, colour, structure, minor components	weathering & alteration	estimated strength & Is50					samples, field tests & Is(50) (MPa)	core run & RQD	defect spacing (mm)				additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other)	
							VL	L	M	H	VH			EH	30	100	300	1000	3000
					SAND (SP): fine to coarse grained, rounded, red brown, orange brown, mottled pale grey, with clay.						SPT 25, 30, 13/80mm HB N*=R						BRIGHTON GROUP		
			9.0		NO CORE: 0.80 m														
			10.0		CLAY (CH): high plasticity, pale grey, mottled pale red.	XW					SPT 2, 9, 16 N*=25							EXTREMELY WEATHERED MELBOURNE FORMATION	
			11.0		NO CORE: 1.50 m													XW siltstone	
			12.0															HP 240 kPa; VS UTP	
			13.0		CLAY (CH): high plasticity, pale grey, mottled pale red.						SPT 3, 7, 8 N*=15							HP >600 kPa	
			14.0		NO CORE: 1.00 m													HP >600 kPa; VS UTP	
			15.0		CLAY (CH): high plasticity, pale grey, mottled pale red.						SPT 7, 15, 15 N*=30							HP >600 kPa	
					Borehole BH1A terminated at 15.50 m Target depth													HP 530 kPa	

method DT diatube NMLC NMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) RR rock roller	support C casing M mud N none water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown	graphic log / core recovery 	weathering & alteration* RS residual soil XW extremely weathered HW highly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high	defect type PT parting JT joint SS sheared surface SZ sheared zone CO contact CS crushed seam SM seam roughness VR very rough RO rough SO smooth POL polished SL slickensided	planarity PL planar CU curved UN undulating ST stepped IR irregular coating CN clean SN stained VN veneer CO coating
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Engineering Log - Borehole

client: **Development Victoria**

principal:

project: **421 Upper Heidelberg Road, Ivanhoe - Proposed Development**

location: **421 Upper Heidelberg Road, Ivanhoe**

Borehole ID: **BH2**

sheet: 1 of 3

project no: **754-MELGE309933**

date started: **08 Feb 2023**

date completed: **08 Feb 2023**

logged by: **BZ**

checked by: **RCD**



position: E: 328653; N: 5819519 (GDA2020(MGA) Zone 55) surface elevation: Not Specified


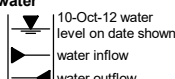
angle from horizontal: 90°

drill model: DB8, Track mounted

drilling fluid: Bentonite

hole diameter: 100 mm

drilling information					material substance							
method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD CASING	1 2 3		E		1.0			FILL: Sandy CLAY : medium plasticity, dark brown, fine to coarse grained sand, trace fine grained gravel.	D	F	<div><div>100</div><div>200</div><div>300</div><div>400</div></div>	FILL
			E									
			E									
			E									
			SPT+E SPT RW/150mm, 0, 2, 3 N=3 U63									
			E	2.0			CH	Sandy CLAY: high plasticity, red brown, mottled pale brown, fine to coarse grained sand.	M	H	<div><div>100</div><div>200</div><div>300</div><div>400</div></div>	BRIGHTON GROUP U63 sample cannot be penetrated with Vane shear or pocket penetrometer PID: 62.5 ppm PID: 56.8 ppm
			CLAY: medium plasticity, red brown.									
					3.0			Borehole BH2 continued as cored hole			<div><div>100</div><div>200</div><div>300</div><div>400</div></div>	
					4.0						<div><div>100</div><div>200</div><div>300</div><div>400</div></div>	
					5.0						<div><div>100</div><div>200</div><div>300</div><div>400</div></div>	
					6.0						<div><div>100</div><div>200</div><div>300</div><div>400</div></div>	
					7.0						<div><div>100</div><div>200</div><div>300</div><div>400</div></div>	

method DT diatube AD auger drilling* AS auger screwing* HA hand auger W washbore RR rock roller * bit shown by suffix e.g. AD/T B blank bit T TC bit V V bit	support M mud C casing penetration  water 	samples & field tests B bulk disturbed sample D disturbed sample E environmental sample SS split spoon sample U## undisturbed sample ##mm diameter HP hand penetrometer (kPa) N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone VS vane shear; peak/remoulded (kPa) R refusal HB hammer bouncing	soil group symbol & material description based on AS 1726:2017 moisture condition D dry M moist W wet Wp plastic limit WI liquid limit	consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
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Engineering Log - Cored Borehole

Borehole ID. **BH2**

sheet: 2 of 3

project no. **754-MELGE309933**

client: **Development Victoria**

date started: **08 Feb 2023**

principal:

date completed: **08 Feb 2023**

project: **421 Upper Heidelberg Road, Ivanhoe - Proposed Development**

logged by: **BZ**

location: **421 Upper Heidelberg Road, Ivanhoe**checked by: **RCD**

position: E: 328653; N: 5819519 (GDA2020(MGA) Zone 55) surface elevation: Not Specified

angle from horizontal: 90°

drill model: DB8, Track mounted

drilling fluid: Bentonite

hole diameter : 100 mm

drilling information				material substance				rock mass defects			
method & support	water	RL (m)	depth (m)	graphic log	material description ROCK TYPE: grain characteristics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 X = axial; O = diametral a = axial; d = diametral	samples, field tests & Is(50) (MPa)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other)
			1.0								
			2.0								
			3.0		started coring at 3.00m						
			4.0		CLAY (CH): medium plasticity, red brown, mottled pale grey, with fine grained sand.						
			5.0		CLAY (CH): high plasticity, pale grey, mottled red brown.						
			6.0		NO CORE: 1.50 m						
			7.0		CLAY (CH): high plasticity, pale grey, with fine grained sand.						
					NO CORE: 1.15 m						
method DT diatube NMLCNMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) RR rock roller				support C casing M mud N none water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown		graphic log / core recovery core recovered no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)		weathering & alteration* RS residual soil XW extremely weathered HW highly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high		defect type PT parting JT joint SS sheared surface SZ sheared zone CO contact CS crushed seam SM seam planarity PL planar CU curved UN undulating ST stepped IR irregular coating CN clean SN stained VN veneer CO coating	

Engineering Log - Cored Borehole

client: **Development Victoria**

principal:

project: **421 Upper Heidelberg Road, Ivanhoe - Proposed Development**

location: **421 Upper Heidelberg Road, Ivanhoe**

Borehole ID. **BH2**

sheet: 3 of 3

project no. **754-MELGE309933**

date started: **08 Feb 2023**

date completed: **08 Feb 2023**

logged by: **BZ**

checked by: **RCD**

position: E: 328653; N: 5819519 (GDA2020(MGA) Zone 55) surface elevation: Not Specified

angle from horizontal: 90°

drill model: DB8, Track mounted

drilling fluid: Bentonite

hole diameter : 100 mm

drilling information				material substance				rock mass defects					
method & support	water	RL (m)	depth (m)	graphic log	material description ROCK TYPE: grain characteristics, colour, structure, minor components	weathering & alteration	estimated strength & Is(50) X = axial; O = diametral a = axial; d = diametral	samples, field tests & Is(50) (MPa)	core run & RQD	defect spacing (mm)	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other)		
											particular	general	
					CLAY (CH): high plasticity, pale grey, mottled pale red, with fine grained sand.						EXTREMELY WEATHERED MELBOURNE FORMATION		
					NO CORE: 1.10 m						— HP 180 kPa		
			9.0										
					NO CORE: 0.70 m								
			10.0										
					CLAY (CH): high plasticity, pale grey, orange brown, mottled pale red, with fine grained sand. becoming pale grey, mottled orange brown, pale red						— HP 120 kPa		
			11.0		becoming orange brown, pale grey mottled pale red						— HP 120 kPa — HP 350 kPa — HP 400 kPa		
											— HP 200 kPa		
			12.0								— HP 100 kPa		
											— HP 500 kPa		
					NO CORE: 1.50 m						— HP >600 kPa — HP >600 kPa		
			13.0										
					CLAY (CH): high plasticity, pale red, mottled pale grey, orange brown, with fine grained sand.						— HP 120 kPa		
			14.0		NO CORE: 0.65 m								
					CLAY (CH): high plasticity, pale grey, mottled pale red, orange brown.			SPT 4, 11/80mm HB N*=R			— HP 150 kPa — HP 250 kPa		
			15.0										
					Borehole BH2 terminated at 15.35 m Target depth								
method DT diatube NMLCNMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) RR rock roller				support C casing M mud N none water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown		graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)		weathering & alteration* RS residual soil XW extremely weathered HW highly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high		defect type PT parting JT joint SS sheared surface SZ sheared zone CO contact CS crushed seam SM seam roughness VR very rough RO rough SO smooth POL polished SL slickensided planarity PL planar CU curved UN undulating ST stepped IR irregular coating CN clean SN stained VN veneer CO coating			

Engineering Log - Borehole

Borehole ID.	BH3
sheet:	1 of 3
project no.	754-MELGE309933
date started:	09 Feb 2023
date completed:	09 Feb 2023
logged by:	BZ
checked by:	RCD

client: ***Development Victoria***
principal:
project: ***421 Upper Heidelberg Road, Ivanhoe - Proposed Development***
location: ***421 Upper Heidelberg Road, Ivanhoe***

position: E: 328684; N: 5819494 (GDA2020(MGA) Zone 55) surface elevation: Not Specified
 drill model: DB8, Track mounted drilling fluid: Bentonite

angle from horizontal: 90°
hole diameter : 100 mm

drilling information						material substance									
method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations			
<div>AD</div> <div>CASING</div>	<div>1</div> <div>2</div> <div>3</div>		E		1.0			FILL: Sandy CLAY : medium plasticity, dark brown, fine to coarse grained sand, with fine to medium grained gravel, with rootlets.	D	F	<div>100</div> <div>200</div> <div>300</div> <div>400</div>	TOPSOIL			
			E					FILL Topsoil							
			E												
			E												
			SPT-E 1, 4, 15/120mm HB N*=R		2.0		SP	SAND: fine to coarse grained, rounded, orange brown, mottled pale red.	VD	BRIGHTON GROUP					
			E												
			E												
							E		3.0			SC	CLAYEY SAND: fine to coarse grained, rounded, orange brown, mottled pale red. becoming brown, orange brown, mottled pale grey	M	
			E					Borehole BH3 continued as cored hole							
					4.0										
					5.0										
					6.0										
					7.0										
method DT diatube AD auger drilling* AS auger screwing* HA hand auger W washbore RR rock roller * bit shown by suffix e.g. AD/T B blank bit T TC bit V V hit			support M mud N nil C casing penetration no resistance ranging to refusal 10-Oct-12 water level on date shown water inflow water outflow			samples & field tests B bulk disturbed sample D disturbed sample E environmental sample SS split spoon sample U## undisturbed sample ##mm diameter HP hand penetrometer (kPa) N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone VS vane shear; peak/remoulded (kPa) R refusal HB hammer bouncing			soil group symbol & material description based on AS 1726:2017 moisture condition D dry M moist W wet Wp plastic limit WI liquid limit		consistency / relative density VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense				



Engineering Log - Cored Borehole

client: **Development Victoria**

principal:

project: **421 Upper Heidelberg Road, Ivanhoe - Proposed Development**

location: **421 Upper Heidelberg Road, Ivanhoe**

Borehole ID. **BH3**

sheet: 2 of 3

project no. **754-MELGE309933**

date started: **09 Feb 2023**

date completed: **09 Feb 2023**

logged by: **BZ**

checked by: **RCD**

position: E: 328684; N: 5819494 (GDA2020(MGA) Zone 55) surface elevation: Not Specified

angle from horizontal: 90°

drill model: DB8, Track mounted

drilling fluid: Bentonite

hole diameter: 100 mm

drilling information				material substance				rock mass defects										
method & support	water	RL (m)	depth (m)	graphic log	material description ROCK TYPE: grain characteristics, colour, structure, minor components	weathering & alteration	estimated strength & Is50				samples, field tests & Is(50) (MPa)	core run & RQD	defect spacing (mm)				additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other)	
							VL	L	M	H			VH	EH	a = axial; d = diametral	30	100	300
			1.0															
			2.0															
			3.0		started coring at 3.00m													
					NO CORE: 0.50 m					SPT 5, 17, 18 N*=35								BRIGHTON GROUP
			4.0		Sandy CLAY (CH): high plasticity, pale grey, mottled brown, fine grained sand.					SPT 12/140mm HB N*=R								
					CLAYEY SAND (SC): fine to coarse grained, rounded, orange brown, brown, mottled pale grey, pale red.													
					NO CORE: 1.30 m													
			5.0		SAND (SP): fine to coarse grained, rounded, red brown, mottled orange brown, pale grey, with clay.					SPT 3, 7, 16 N*=23								
					NO CORE: 0.75 m													
			6.0		SAND (SP): fine to coarse grained, rounded, red brown, mottled orange brown, pale grey, with clay.													
					CLAY (CH): high plasticity, pale grey, mottled pale red, with fine grained sand.													
			7.0															EXTREMELY WEATHERED MELBOURNE FORMATION
																		XW Siltstone
																		HP 450 kPa; VS UTP
																		HP >600 kPa
																		HP >600 kPa; VS UTP
																		HP 570 kPa
																		HP 570 kPa
																		HP 550 kPa
method DT diatube NMLCNMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) RR rock roller				support C casing M mud N none water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown		graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)				weathering & alteration* RS residual soil XW extremely weathered HW highly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high				defect type PT parting JT joint SS sheared surface SZ sheared zone CO contact CS crushed seam SM seam roughness VR very rough RO rough SO smooth POL polished SL slickensided planarity PL planar CU curved UN undulating ST stepped IR irregular coating CN clean SN stained VN veneer CO coating				



Engineering Log - Cored Borehole

client: **Development Victoria**

principal:

project: **421 Upper Heidelberg Road, Ivanhoe - Proposed Development**

location: **421 Upper Heidelberg Road, Ivanhoe**

Borehole ID. **BH3**

sheet: 3 of 3

project no. **754-MELGE309933**

date started: **09 Feb 2023**

date completed: **09 Feb 2023**

logged by: **BZ**

checked by: **RCD**








position: E: 328684; N: 5819494 (GDA2020(MGA) Zone 55) surface elevation: Not Specified

angle from horizontal: 90°

drill model: DB8, Track mounted

drilling fluid: Bentonite

hole diameter: 100 mm

drilling information				material substance				rock mass defects										
method & support	water	RL (m)	depth (m)	graphic log	material description ROCK TYPE: grain characteristics, colour, structure, minor components	weathering & alteration	estimated strength & Is50				samples, field tests & Is(50) (MPa)	core run & RQD	defect spacing (mm)				additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other)	
							VL	L	M	H			EH	O	X	30	100	300
HQ					CLAY (CH): high plasticity, pale grey, mottled pale red, with fine grained sand. (continued)						VS > kPa						VS > kPa	EXTREMELY WEATHERED MELBOURNE FORMATION HP >600 kPa HP 550 kPa HP >600 kPa HP 550 kPa HP 550 kPa HP >600 kPa; VS UTP HP >600 kPa HP 550 kPa; VS UTP HP 570 kPa HP 580 kPa HP 550 kPa HP >600 kPa; VS UTP HP 590 kPa HP >600 kPa HP 250 kPa HP 550 kPa; VS UTP HP 350 kPa
			9.0		becoming pale grey, pale red												HP >600 kPa HP 550 kPa	
					becoming pale red, mottled pale grey												HP >600 kPa; VS UTP	
			10.0		NO CORE: 1.35 m													
			11.0		CLAY (CH): fine to coarse grained, high plasticity, pale grey, mottled pale red, with fine grained sand.												HP >600 kPa HP 550 kPa; VS UTP HP 570 kPa	
																	HP 580 kPa	
			12.0														HP 550 kPa HP >600 kPa; VS UTP HP 590 kPa	
																	HP >600 kPa	
			13.0		NO CORE: 1.50 m													
		14.0		CLAY (CH): high plasticity, pale red, mottled pale grey, with fine grained sand.													HP 250 kPa HP 550 kPa; VS UTP	
					NO CORE: 0.40 m													
		15.0		CLAY (CH): high plasticity, pale red, mottled pale grey, with fine grained sand. Borehole BH3 terminated at 15.00 m Target depth														

method DT diatube NMLCNMLC core (51.9 mm) NQ wireline core (47.6mm) HQ wireline core (63.5mm) PQ wireline core (85.0mm) RR rock roller	support C casing M mud N none water 10/10/12, water level on date shown water inflow complete drilling fluid loss partial drilling fluid loss water pressure test result (lugeons) for depth interval shown	graphic log / core recovery core recovered (graphic symbols indicate material) no core recovered core run & RQD barrel withdrawn RQD = Rock Quality Designation (%)	weathering & alteration* RS residual soil XW extremely weathered HW highly weathered MW moderately weathered SW slightly weathered FR fresh *W replaced with A for alteration strength VL very low L low M medium H high VH very high EH extremely high	defect type PT parting JT joint SS sheared surface SZ sheared zone CO contact CS crushed seam SM seam roughness VR very rough RO rough SO smooth POL polished SL slickensided	planarity PL planar CU curved UN undulating ST stepped IR irregular coating CN clean SN stained VN veneer CO coating
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APPENDIX G LABORATORY CERTIFICATES OF ANALYSIS



Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 Tel: +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 Tel: +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magawar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 Tel: +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarie QLD 4172 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794	1/2 Frost Drive Mayfield West NSW 2304 Tel: +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289

Perth	Auckland	Christchurch
46-48 Banksia Road	35 O'Rourke Road	43 Detroit Drive
Welshpool	Penrose	Rollstone,
WA 6106	Auckland 1061	Christchurch 7675
Tel: +61 8 6253 4444	Tel: +64 9 526 45 51	Tel: 0800 856 450
NATA# 2377 Site# 2370	IANZ# 1327	IANZ# 1290

Order No.:
Report #: 961936
Phone: 03 9290 7000
Fax:

Received: Feb 8, 2023 5:40 PM
Due: Feb 16, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Eurofins Analytical Services Manager : Savini Suduweli

[illegible]

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 Tel: +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 Tel: +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 Tel: +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarrie QLD 4172 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794	1/2 Frost Drive Mayfield West NSW 2304 Tel: +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road Welshpool WA 6106 Tel: +61 8 6253 4444 NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	Roger Gibbs
Project name:	HEIDELBERG ROAD DEVELOPMENT
Project ID:	754-MELGE309933
Turnaround time:	5 Day
Date/Time received	Feb 8, 2023 5:40 PM
Eurofins reference	961936

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✓ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Savini Suduweli on phone : or by email: SaviniSuduweli@eurofins.com

Results will be delivered electronically via email to Roger Gibbs - roger.gibbs@tetrattech.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.

Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: **Roger Gibbs**

Report **961936-W**
Project name **HEIDELBERG ROAD DEVELOPMENT**
Project ID **754-MELGE309933**
Received Date **Feb 08, 2023**

Client Sample ID			B901551I	QC1	QC3	QC4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Fe0018104	M23-Fe0018105	M23-Fe0018106	M23-Fe0018107
Date Sampled			Feb 08, 2023	Feb 08, 2023	Feb 08, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	-	-	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	-	-	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	-	-	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	-	-	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	-	-	< 0.1
TRH C6-C10	0.02	mg/L	< 0.02	-	-	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	-	-	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	-	-	< 0.05
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	-	-	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	-	-	< 0.1
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	-	-	-
1.2.4-Trichlorobenzene	0.001	mg/L	< 0.001	-	-	-
Hexachlorobutadiene	0.001	mg/L	< 0.001	-	-	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	-	-	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	-	-	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	-	-	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	-	-	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	-	-	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
2-Butanone (MEK)	0.005	mg/L	< 0.005	-	-	-
2-Propanone (Acetone)	0.005	mg/L	< 0.005	-	-	-
4-Chlorotoluene	0.001	mg/L	< 0.001	-	-	-
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005	-	-	-

Client Sample ID			B901551I	QC1	QC3	QC4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Fe0018104	M23-Fe0018105	M23-Fe0018106	M23-Fe0018107
Date Sampled			Feb 08, 2023	Feb 08, 2023	Feb 08, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Volatile Organics						
Allyl chloride	0.001	mg/L	< 0.001	-	-	-
Benzene	0.001	mg/L	< 0.001	-	-	-
Bromobenzene	0.001	mg/L	< 0.001	-	-	-
Bromochloromethane	0.001	mg/L	< 0.001	-	-	-
Bromodichloromethane	0.001	mg/L	< 0.001	-	-	-
Bromoform	0.001	mg/L	< 0.001	-	-	-
Bromomethane	0.005	mg/L	< 0.005	-	-	-
Carbon disulfide	0.001	mg/L	< 0.001	-	-	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	-	-	-
Chlorobenzene	0.001	mg/L	< 0.001	-	-	-
Chloroethane	0.005	mg/L	< 0.005	-	-	-
Chloroform	0.005	mg/L	< 0.005	-	-	-
Chloromethane	0.005	mg/L	< 0.005	-	-	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	-	-	-
Dibromochloromethane	0.001	mg/L	< 0.001	-	-	-
Dibromomethane	0.001	mg/L	< 0.001	-	-	-
Dichlorodifluoromethane	0.005	mg/L	< 0.005	-	-	-
Ethylbenzene	0.001	mg/L	< 0.001	-	-	-
Iodomethane	0.001	mg/L	< 0.001	-	-	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	-	-	-
m&p-Xylenes	0.002	mg/L	< 0.002	-	-	-
Methylene Chloride	0.005	mg/L	< 0.005	-	-	-
o-Xylene	0.001	mg/L	< 0.001	-	-	-
Styrene	0.001	mg/L	< 0.001	-	-	-
Tetrachloroethene	0.001	mg/L	< 0.001	-	-	-
Toluene	0.001	mg/L	< 0.001	-	-	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	-	-	-
Trichloroethene	0.001	mg/L	< 0.001	-	-	-
Trichlorofluoromethane	0.005	mg/L	< 0.005	-	-	-
Vinyl chloride	0.005	mg/L	< 0.005	-	-	-
Xylenes - Total*	0.003	mg/L	< 0.003	-	-	-
Total MAH*	0.003	mg/L	< 0.003	-	-	-
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	-	-	-
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	-	-	-
4-Bromofluorobenzene (surr.)	1	%	100	-	-	-
Toluene-d8 (surr.)	1	%	88	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.01	mg/L	< 0.01	-	-	< 0.01
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	-	-	-
Acenaphthylene	0.001	mg/L	< 0.001	-	-	-
Anthracene	0.001	mg/L	< 0.001	-	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-	-
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	-	-	-
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	-	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-	-

Client Sample ID			B901551I	QC1	QC3	QC4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23- Fe0018104	M23- Fe0018105	M23- Fe0018106	M23- Fe0018107
Date Sampled			Feb 08, 2023	Feb 08, 2023	Feb 08, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Chrysene	0.001	mg/L	< 0.001	-	-	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	-	-	-
Fluoranthene	0.001	mg/L	< 0.001	-	-	-
Fluorene	0.001	mg/L	< 0.001	-	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-	-
Naphthalene	0.001	mg/L	< 0.001	-	-	-
Phenanthrene	0.001	mg/L	< 0.001	-	-	-
Pyrene	0.001	mg/L	< 0.001	-	-	-
Total PAH*	0.001	mg/L	< 0.001	-	-	-
2-Fluorobiphenyl (surr.)	1	%	79	-	-	-
p-Terphenyl-d14 (surr.)	1	%	50	-	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	-	-	-
4,4'-DDD	0.0002	mg/L	< 0.0002	-	-	-
4,4'-DDE	0.0002	mg/L	< 0.0002	-	-	-
4,4'-DDT	0.0002	mg/L	< 0.0002	-	-	-
a-HCH	0.0002	mg/L	< 0.0002	-	-	-
Aldrin	0.0002	mg/L	< 0.0002	-	-	-
b-HCH	0.0002	mg/L	< 0.0002	-	-	-
d-HCH	0.0002	mg/L	< 0.0002	-	-	-
Dieldrin	0.0002	mg/L	< 0.0002	-	-	-
Endosulfan I	0.0002	mg/L	< 0.0002	-	-	-
Endosulfan II	0.0002	mg/L	< 0.0002	-	-	-
Endosulfan sulphate	0.0002	mg/L	< 0.0002	-	-	-
Endrin	0.0002	mg/L	< 0.0002	-	-	-
Endrin aldehyde	0.0002	mg/L	< 0.0002	-	-	-
Endrin ketone	0.0002	mg/L	< 0.0002	-	-	-
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	-	-	-
Heptachlor	0.0002	mg/L	< 0.0002	-	-	-
Heptachlor epoxide	0.0002	mg/L	< 0.0002	-	-	-
Hexachlorobenzene	0.0002	mg/L	< 0.0002	-	-	-
Methoxychlor	0.0002	mg/L	< 0.0002	-	-	-
Toxaphene	0.005	mg/L	< 0.005	-	-	-
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	-	-	-
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	-	-	-
Dibutylchlorendate (surr.)	1	%	68	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	50	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	-	-	-
Aroclor-1221	0.005	mg/L	< 0.005	-	-	-
Aroclor-1232	0.005	mg/L	< 0.005	-	-	-
Aroclor-1242	0.005	mg/L	< 0.005	-	-	-
Aroclor-1248	0.005	mg/L	< 0.005	-	-	-
Aroclor-1254	0.005	mg/L	< 0.005	-	-	-
Aroclor-1260	0.005	mg/L	< 0.005	-	-	-
Total PCB*	0.005	mg/L	< 0.005	-	-	-
Dibutylchlorendate (surr.)	1	%	68	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	50	-	-	-

Client Sample ID			B901551I	QC1	QC3	QC4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Fe0018104	M23-Fe0018105	M23-Fe0018106	M23-Fe0018107
Date Sampled			Feb 08, 2023	Feb 08, 2023	Feb 08, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	-	-	-
2,4-Dichlorophenol	0.003	mg/L	< 0.003	-	-	-
2,4,5-Trichlorophenol	0.01	mg/L	< 0.01	-	-	-
2,4,6-Trichlorophenol	0.01	mg/L	< 0.01	-	-	-
2,6-Dichlorophenol	0.003	mg/L	< 0.003	-	-	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	-	-	-
Pentachlorophenol	0.01	mg/L	< 0.01	-	-	-
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	-	-	-
Total Halogenated Phenol*	0.01	mg/L	< 0.01	-	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4,6-dinitrophenol	0.1	mg/L	< 0.1	-	-	-
2-Methyl-4,6-dinitrophenol	0.03	mg/L	< 0.03	-	-	-
2-Nitrophenol	0.01	mg/L	< 0.01	-	-	-
2,4-Dimethylphenol	0.003	mg/L	< 0.003	-	-	-
2,4-Dinitrophenol	0.03	mg/L	< 0.03	-	-	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	-	-	-
Total cresols*	0.01	mg/L	< 0.01	-	-	-
4-Nitrophenol	0.03	mg/L	< 0.03	-	-	-
Dinoseb	0.1	mg/L	< 0.1	-	-	-
Phenol	0.003	mg/L	< 0.003	-	-	-
Phenol-d6 (surr.)	1	%	44	-	-	-
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	-	-	-
Chloride	1	mg/L	12	-	-	-
Chromium (hexavalent)	0.005	mg/L	< 0.005	-	-	-
Conductivity (at 25 °C)	10	uS/cm	330	-	-	-
Cyanide (total)	0.005	mg/L	< 0.005	-	-	-
Fluoride	0.5	mg/L	< 0.5	-	-	-
Nitrate & Nitrite (as N)	0.05	mg/L	1.7	-	-	-
pH (at 25 °C)	0.1	pH Units	7.9	-	-	-
Phosphate total (as P)	0.01	mg/L	0.37	-	-	-
Sulphate (as SO4)	5	mg/L	< 5	-	-	-
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.0	-	-	-
Total Nitrogen (as N)*	0.2	mg/L	2.7	-	-	-
Heavy Metals						
Arsenic	0.001	mg/L	-	-	< 0.001	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Beryllium	0.001	mg/L	-	-	< 0.001	-
Beryllium (filtered)	0.001	mg/L	-	< 0.001	-	-
Boron	0.05	mg/L	-	-	< 0.05	-
Boron (filtered)	0.05	mg/L	-	< 0.05	-	-
Cadmium	0.0002	mg/L	-	-	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Chromium	0.001	mg/L	-	-	< 0.001	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Cobalt	0.001	mg/L	-	-	< 0.001	-
Cobalt (filtered)	0.001	mg/L	-	< 0.001	-	-
Copper	0.001	mg/L	-	-	< 0.001	-

Client Sample ID			B901551I	QC1	QC3	QC4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Fe0018104	M23-Fe0018105	M23-Fe0018106	M23-Fe0018107
Date Sampled			Feb 08, 2023	Feb 08, 2023	Feb 08, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Copper (filtered)	0.001	mg/L	0.005	0.005	-	-
Lead	0.001	mg/L	-	-	< 0.001	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Manganese	0.005	mg/L	-	-	< 0.005	-
Manganese (filtered)	0.005	mg/L	-	0.011	-	-
Mercury	0.0001	mg/L	-	-	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Molybdenum (filtered)	0.005	mg/L	< 0.005	-	-	-
Nickel	0.001	mg/L	-	-	< 0.001	-
Nickel (filtered)	0.001	mg/L	0.009	0.008	-	-
Selenium	0.001	mg/L	-	-	< 0.001	-
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Silver (filtered)	0.005	mg/L	< 0.005	-	-	-
Tin (filtered)	0.005	mg/L	< 0.005	-	-	-
Zinc	0.005	mg/L	-	-	< 0.005	-
Zinc (filtered)	0.005	mg/L	0.19	0.17	-	-
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA) ^{N11}	0.05	ug/L	< 0.05	-	-	-
Perfluoropentanoic acid (PFPeA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
Perfluorohexanoic acid (PFHxA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
Perfluoroheptanoic acid (PFHpA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
Perfluorooctanoic acid (PFOA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
Perfluorononanoic acid (PFNA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
Perfluorodecanoic acid (PFDA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
Perfluoroundecanoic acid (PFUnDA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
Perfluorododecanoic acid (PFDoDA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
Perfluorotridecanoic acid (PFTeDA) ^{N15}	0.01	ug/L	< 0.01	-	-	-
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
13C4-PFBA (surr.)	1	%	70	-	-	-
13C5-PFPeA (surr.)	1	%	90	-	-	-
13C5-PFHxA (surr.)	1	%	82	-	-	-
13C4-PFHpA (surr.)	1	%	86	-	-	-
13C8-PFOA (surr.)	1	%	103	-	-	-
13C5-PFNA (surr.)	1	%	107	-	-	-
13C6-PFDA (surr.)	1	%	79	-	-	-
13C2-PFUnDA (surr.)	1	%	75	-	-	-
13C2-PFDoDA (surr.)	1	%	66	-	-	-
13C2-PFTeDA (surr.)	1	%	69	-	-	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA) ^{N11}	0.05	ug/L	< 0.05	-	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	0.05	ug/L	< 0.05	-	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	0.05	ug/L	< 0.05	-	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) ^{N11}	0.05	ug/L	< 0.05	-	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) ^{N11}	0.05	ug/L	< 0.05	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	0.05	ug/L	< 0.05	-	-	-

Client Sample ID			B901551I	QC1	QC3	QC4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Fe0018104	M23-Fe0018105	M23-Fe0018106	M23-Fe0018107
Date Sampled			Feb 08, 2023	Feb 08, 2023	Feb 08, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	0.05	ug/L	< 0.05	-	-	-
13C8-FOSA (surr.)	1	%	92	-	-	-
D3-N-MeFOSA (surr.)	1	%	75	-	-	-
D5-N-EtFOSA (surr.)	1	%	80	-	-	-
D7-N-MeFOSE (surr.)	1	%	75	-	-	-
D9-N-EtFOSE (surr.)	1	%	75	-	-	-
D5-N-EtFOSAA (surr.)	1	%	75	-	-	-
D3-N-MeFOSAA (surr.)	1	%	69	-	-	-
Perfluoroalkyl sulfonic acids (PFASs)						
Perfluorobutanesulfonic acid (PFBS) ^{N11}	0.01	ug/L	< 0.01	-	-	-
Perfluorononanesulfonic acid (PFNS) ^{N15}	0.01	ug/L	< 0.01	-	-	-
Perfluoropropanesulfonic acid (PFPrS) ^{N15}	0.01	ug/L	< 0.01	-	-	-
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	0.01	ug/L	< 0.01	-	-	-
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	0.01	ug/L	< 0.01	-	-	-
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	0.01	ug/L	< 0.01	-	-	-
Perfluorooctanesulfonic acid (PFOS) ^{N11}	0.01	ug/L	^{N09} 0.03	-	-	-
Perfluorodecanesulfonic acid (PFDS) ^{N15}	0.01	ug/L	< 0.01	-	-	-
13C3-PFBS (surr.)	1	%	88	-	-	-
18O2-PFHxS (surr.)	1	%	94	-	-	-
13C8-PFOS (surr.)	1	%	80	-	-	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) ^{N11}	0.05	ug/L	< 0.05	-	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	-	-	-
13C2-4:2 FTSA (surr.)	1	%	148	-	-	-
13C2-6:2 FTSA (surr.)	1	%	92	-	-	-
13C2-8:2 FTSA (surr.)	1	%	75	-	-	-
13C2-10:2 FTSA (surr.)	1	%	84	-	-	-
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.03	-	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.03	-	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.03	-	-	-
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	-	-	-
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	-	-	-
BTEX						
Benzene	0.001	mg/L	-	-	-	< 0.001
Toluene	0.001	mg/L	-	-	-	< 0.001
Ethylbenzene	0.001	mg/L	-	-	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	-	-	< 0.002
o-Xylene	0.001	mg/L	-	-	-	< 0.001
Xylenes - Total*	0.003	mg/L	-	-	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	-	-	107

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 Tel: +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 Tel: +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 Tel: +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarrie QLD 4172 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794	1/2 Frost Drive Mayfield West NSW 2304 Tel: +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road Welshpool WA 6106 Tel: +61 8 6253 4444 NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Christchurch
35 O'Rourke Road Penrose, Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	Roger Gibbs
Project name:	Ivanhoe
Project ID:	754-MELGE309933
Turnaround time:	5 Day
Date/Time received	Feb 14, 2023 5:29 PM
Eurofins reference	963822

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✗ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✓ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Only a single vials received for samples QC13, QC07, QC04. Only Volatile TRH and BTEXN are possible from a single vial, not the full B1 suite.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Savini Suduweli on phone : or by email: SaviniSuduweli@eurofins.com

Results will be delivered electronically via email to Roger Gibbs - roger.gibbs@tetrattech.com.

Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.



Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Auckland
35 O'Rourke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Project Name: Ivanhoe
Project ID: 754-MELGE309933

Order No.:
Report #: 963822
Phone: 03 9290 7000
Fax:

Received: Feb 14, 2023 5:29 PM
Due: Feb 21, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Asbestos Absence / Presence	HOLD	Polycyclic Aromatic Hydrocarbons	Metals IWRG 621 : Metals M12	Moisture Set	Eurofins Suite B4	Vic EPA 1828.2 Table 3 (Solids)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	BH1_0.1	Feb 06, 2023		Soil	M23-Fe0033428					X		X	
2	BH1_0.5	Feb 06, 2023		Soil	M23-Fe0033429				X	X	X		
3	BH1_1.0	Feb 06, 2023		Soil	M23-Fe0033430				X	X	X		
4	BH1_1.5	Feb 06, 2023		Soil	M23-Fe0033431			X		X			
5	BH1_1.6	Feb 06, 2023		Soil	M23-Fe0033432				X	X			
6	BH1_2.9	Feb 06, 2023		Soil	M23-Fe0033433				X	X			
7	BH1_3.5	Feb 06, 2023		Soil	M23-Fe0033434				X	X			
8	BH2_0.1	Feb 08, 2023		Soil	M23-Fe0033435				X	X	X		
9	BH2_0.5	Feb 08, 2023		Soil	M23-Fe0033436					X		X	
10	BH2_0.9	Feb 08, 2023		Soil	M23-Fe0033437				X	X			
11	BH2_1.2	Feb 08, 2023		Soil	M23-Fe0033438			X		X			
12	BH2_1.8	Feb 08, 2023		Soil	M23-Fe0033439				X	X			
13	BH3_0.1	Feb 09, 2023		Soil	M23-Fe0033440					X		X	



Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
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VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

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WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Project Name: Ivanhoe
Project ID: 754-MELGE309933

Order No.:
Report #: 963822
Phone: 03 9290 7000
Fax:

Received: Feb 14, 2023 5:29 PM
Due: Feb 21, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Asbestos Absence / Presence	HOLD	Polyyclic Aromatic Hydrocarbons	Metals IWRG 621 : Metals M12	Moisture Set	Eurofins Suite B4	Vic EPA 1828.2 Table 3 (Solids)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
14	BH3_0.5	Feb 09, 2023		Soil	M23-Fe0033441				X	X	X		
15	BH3_0.8	Feb 09, 2023		Soil	M23-Fe0033442				X	X	X		
16	BH3_1.4	Feb 09, 2023		Soil	M23-Fe0033443			X		X			
17	BH3_1.8	Feb 09, 2023		Soil	M23-Fe0033444					X		X	
18	BH3_2.4	Feb 09, 2023		Soil	M23-Fe0033445				X	X			
19	QC01	Feb 06, 2023		Soil	M23-Fe0033446				X	X	X		
20	QC03	Feb 06, 2023		Water	M23-Fe0033447				X		X		
21	QC04	Feb 06, 2023		Water	M23-Fe0033448								X
22	QC06	Feb 08, 2023		Water	M23-Fe0033449				X		X		
23	QC07	Feb 08, 2023		Water	M23-Fe0033450								X
24	QC11	Feb 09, 2023		Water	M23-Fe0033451				X		X		
25	QC13	Feb 09, 2023		Water	M23-Fe0033452								X
26	S1	Not Provided		Building Materials	M23-Fe0033453	X							
27	BH1_2.1	Feb 06, 2023		Soil	M23-Fe0033454		X						
28	BH1_3.2	Feb 06, 2023		Soil	M23-Fe0033455		X						



Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
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Murarrie
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Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Project Name: Ivanhoe
Project ID: 754-MELGE309933

Order No.:
Report #: 963822
Phone: 03 9290 7000
Fax:

Received: Feb 14, 2023 5:29 PM
Due: Feb 21, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Asbestos Absence / Presence	HOLD	Polycyclic Aromatic Hydrocarbons	Metals IWRG 621 : Metals M12	Moisture Set	Eurofins Suite B4	Vic EPA 1828.2 Table 3 (Solids)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
29	BH2_2.4	Feb 08, 2023		Soil	M23-Fe0033456		X						
30	BH3_2.9	Feb 09, 2023		Soil	M23-Fe0033457		X						
31	QC05	Feb 06, 2023		Water	M23-Fe0033458		X						
32	QC08	Feb 08, 2023		Water	M23-Fe0033459		X						
33	QC09	Feb 09, 2023		Soil	M23-Fe0033460		X						
34	QC10	Feb 09, 2023		Soil	M23-Fe0033461		X						
35	QC12	Feb 09, 2023		Water	M23-Fe0033462		X						
Test Counts						1	9	3	15	19	9	4	3

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 09, 2023	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 09, 2023	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 09, 2023	7 Days
Volatile Organics - Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)	Melbourne	Feb 09, 2023	7 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Feb 09, 2023	7 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	Feb 09, 2023	7 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)	Melbourne	Feb 09, 2023	7 Days
Phenols (Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Feb 09, 2023	7 Days
Phenols (non-Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Feb 09, 2023	7 Days
Chromium (hexavalent) - Method: LTM-INO-4100 Hexavalent Chromium by Spectrometric detection	Melbourne	Feb 09, 2023	28 Days
Cyanide (total) - Method: LTM-INO-4020 Total Free WAD Cyanide by CFA	Melbourne	Feb 09, 2023	14 Days
Fluoride - Method: in-house method LTM-INO-4390 Fluoride by Discrete Analyser	Melbourne	Feb 09, 2023	28 Days
pH (at 25 °C) - Method: LTM-GEN-7090 pH in water by ISE	Melbourne	Feb 09, 2023	0 Hours
Chloride - Method: LTM-INO-4090 Chloride by Discrete Analyser	Melbourne	Feb 10, 2023	28 Days
Conductivity (at 25 °C) - Method: LTM-INO-4030 Conductivity	Melbourne	Feb 10, 2023	28 Days
Sulphate (as SO ₄) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Feb 10, 2023	28 Days
NEPM 2013 Metals without Cr ⁶⁺ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Feb 09, 2023	180 Days
Metals IWRG 621 : Metals M12 filtered - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Feb 14, 2023	28 Days
NEPM 2013 Filtered Metals without Cr ⁶⁺ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Feb 14, 2023	28 Days
Total Nitrogen Set (as N) Nitrate & Nitrite (as N) - Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA	Melbourne	Feb 09, 2023	28 Days
Total Kjeldahl Nitrogen (as N) - Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA	Melbourne	Feb 09, 2023	28 Days
Eurofins Suite B19A: Total N (TKN, NO _x), Total P Phosphate total (as P) - Method: LTM-INO-4040 Phosphate by CFA	Melbourne	Feb 09, 2023	28 Days
Per- and Polyfluoroalkyl Substances (PFASs) Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Melbourne	Feb 09, 2023	28 Days
Perfluoroalkyl sulfonamido substances	Melbourne	Feb 09, 2023	28 Days

Description	Testing Site	Extracted	Holding Time
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) Perfluoroalkyl sulfonic acids (PFASs)	Melbourne	Feb 09, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Feb 09, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) PFASs Summations	Melbourne	Feb 08, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS) BTEX and Naphthalene			
BTEX	Melbourne	Feb 09, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Project Name: HEIDELBERG ROAD DEVELOPMENT
Project ID: 754-MELGE309933

Order No.:
Report #: 961936
Phone: 03 9290 7000
Fax:

Received: Feb 8, 2023 5:40 PM
Due: Feb 16, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Chloride	Conductivity (at 25 °C)	Sulphate (as SO4)	Metals IWRG 621 : Metals M12 filtered	BTEX and Naphthalene	Total Recoverable Hydrocarbons	Vic EPA IWRG 621 (Total metals)	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	Eurofins Suite B19A: Total N (TKN, NOx), Total P	Per- and Polyfluoroalkyl Substances (PFASs)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X
External Laboratory																
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	B901551I	Feb 08, 2023		Water	M23-Fe0018104	X	X	X	X			X		X	X	
2	QC1	Feb 08, 2023		Water	M23-Fe0018105											X
3	QC3	Feb 08, 2023		Water	M23-Fe0018106								X			
4	QC4	Feb 08, 2023		Water	M23-Fe0018107					X	X					
Test Counts						1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006



NATA Accredited

Accreditation Number 1261

Site Number 1254

Accredited for compliance with ISO/IEC 17025—Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: Roger Gibbs
Report 963822-AID
Project Name Ivanhoe
Project ID 754-MELGE309933
Received Date Feb 14, 2023
Date Reported Feb 22, 2023

Methodology:

Asbestos Fibre
 Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
 Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
 Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
 containing material
 (ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.

Project Name Ivanhoe
Project ID 754-MELGE309933
Date Sampled
Report 963822-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
S1	23-Fe0033453	not provided	Approximate Sample 21g / 70 x 70 x 5mm Sample consisted of: Cement sheet	Chrysotile and amosite asbestos detected. Organic fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Melbourne	Feb 15, 2023	Indefinite

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Project Name: Ivanhoe
Project ID: 754-MELGE309933

Order No.:
Report #: 963822
Phone: 03 9290 7000
Fax:

Received: Feb 14, 2023 5:29 PM
Due: Feb 21, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Asbestos Absence / Presence	HOLD	Polycyclic Aromatic Hydrocarbons	Metals IWRG 621 : Metals M12	Moisture Set	Eurofins Suite B4	Vic EPA 1828.2 Table 3 (Solids)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	BH1_0.1	Feb 06, 2023		Soil	M23-Fe0033428					X		X	
2	BH1_0.5	Feb 06, 2023		Soil	M23-Fe0033429				X	X	X		
3	BH1_1.0	Feb 06, 2023		Soil	M23-Fe0033430				X	X	X		
4	BH1_1.5	Feb 06, 2023		Soil	M23-Fe0033431			X		X			
5	BH1_1.6	Feb 06, 2023		Soil	M23-Fe0033432				X	X			
6	BH1_2.9	Feb 06, 2023		Soil	M23-Fe0033433				X	X			
7	BH1_3.5	Feb 06, 2023		Soil	M23-Fe0033434				X	X			
8	BH2_0.1	Feb 08, 2023		Soil	M23-Fe0033435				X	X	X		
9	BH2_0.5	Feb 08, 2023		Soil	M23-Fe0033436					X		X	
10	BH2_0.9	Feb 08, 2023		Soil	M23-Fe0033437				X	X			
11	BH2_1.2	Feb 08, 2023		Soil	M23-Fe0033438			X		X			
12	BH2_1.8	Feb 08, 2023		Soil	M23-Fe0033439				X	X			
13	BH3_0.1	Feb 09, 2023		Soil	M23-Fe0033440					X		X	

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006
Project Name: Ivanhoe
Project ID: 754-MELGE309933

Order No.:
Report #: 963822
Phone: 03 9290 7000
Fax:

Received: Feb 14, 2023 5:29 PM
Due: Feb 21, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Asbestos Absence / Presence	HOLD	Polyyclic Aromatic Hydrocarbons	Metals IWRG 621 : Metals M12	Moisture Set	Eurofins Suite B4	Vic EPA 1828.2 Table 3 (Solids)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
14	BH3_0.5	Feb 09, 2023		Soil	M23-Fe0033441				X	X	X		
15	BH3_0.8	Feb 09, 2023		Soil	M23-Fe0033442				X	X	X		
16	BH3_1.4	Feb 09, 2023		Soil	M23-Fe0033443			X		X			
17	BH3_1.8	Feb 09, 2023		Soil	M23-Fe0033444					X		X	
18	BH3_2.4	Feb 09, 2023		Soil	M23-Fe0033445				X	X			
19	QC01	Feb 06, 2023		Soil	M23-Fe0033446				X	X	X		
20	QC03	Feb 06, 2023		Water	M23-Fe0033447				X		X		
21	QC04	Feb 06, 2023		Water	M23-Fe0033448								X
22	QC06	Feb 08, 2023		Water	M23-Fe0033449				X		X		
23	QC07	Feb 08, 2023		Water	M23-Fe0033450								X
24	QC11	Feb 09, 2023		Water	M23-Fe0033451				X		X		
25	QC13	Feb 09, 2023		Water	M23-Fe0033452								X
26	S1	Not Provided		Building Materials	M23-Fe0033453	X							
27	BH1_2.1	Feb 06, 2023		Soil	M23-Fe0033454		X						
28	BH1_3.2	Feb 06, 2023		Soil	M23-Fe0033455		X						

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Project Name: Ivanhoe
Project ID: 754-MELGE309933

Order No.:
Report #: 963822
Phone: 03 9290 7000
Fax:

Received: Feb 14, 2023 5:29 PM
Due: Feb 21, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Asbestos Absence / Presence	HOLD	Polycyclic Aromatic Hydrocarbons	Metals IWRG 621 : Metals M12	Moisture Set	Eurofins Suite B4	Vic EPA 1828.2 Table 3 (Solids)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
29	BH2_2.4	Feb 08, 2023		Soil	M23-Fe0033456		X						
30	BH3_2.9	Feb 09, 2023		Soil	M23-Fe0033457		X						
31	QC05	Feb 06, 2023		Water	M23-Fe0033458		X						
32	QC08	Feb 08, 2023		Water	M23-Fe0033459		X						
33	QC09	Feb 09, 2023		Soil	M23-Fe0033460		X						
34	QC10	Feb 09, 2023		Soil	M23-Fe0033461		X						
35	QC12	Feb 09, 2023		Water	M23-Fe0033462		X						
Test Counts						1	9	3	15	19	9	4	3

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (% w/w)
F/ffd	Airborne fibre filter loading as Fibres (N) per Fields counted (n)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (C)
g, kg	Mass, e.g. of whole sample (M) or asbestos-containing find within the sample (m)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (V = r x t)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (r)
min	Time (t), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration:
$$C = \left(\frac{A}{a}\right) \times \left(\frac{N}{r}\right) \times \left(\frac{1}{V}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{r}\right) \times \left(\frac{1}{V}\right)$$

Asbestos Content (as asbestos):
$$\% w/w = \frac{(m \times P_A)}{M}$$

Weighted Average (of asbestos):
$$\%_{WA} = \frac{\sum (m \times P_A) \times x}{x}$$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 <i>Appendix 2</i> , else assumed to be 15% in accordance with WA DOH <i>Appendix 2 (PA)</i> .
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (% w/w).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, <i>Asbestos: The Analysts Guide</i> , 2nd Edition (2021).
HSG264	UK HSE HSG264, <i>Asbestos: The Survey Guide</i> (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (K) as derived from the effective filter area of the given AFM membrane used for collecting the sample (A) and the projected eyepiece graticule area of the specific microscope used for the analysis (a).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, <i>Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres</i> , 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, <i>Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia</i> (updated 2021), including Appendix Four: <i>Laboratory analysis</i>
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (%_{WA}).

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	N/A
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Hiren Patel Senior Analyst-Asbestos

Authorised by:

Sheha Prakash Senior Analyst-Asbestos



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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☐ **Sydney Laboratory**
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2060
Email: Sample@NSWResources.com

Brisbane Laboratory
Unit 1/21 Smithwood Place Maroon QLD 4172
07 39972 41900 Enquiries@biondi.com.au

Perth Laboratory
Unit 2/91 Leach Highway Kewdale WA 6105
Tel: 08 941 0000 Fax: 08 941 0001

Melbourne Laboratory
6 Montefiore Road Dandenong South VIC 3175

Company Information										Project Details										Sample Information										Analysis & Results									
Company Name: Colony Environmental Pty Ltd W/C Address: Level 1, 428 Johnson Street Abbotsford, Victoria, 3067, Australia										Project Name: 754-MEL-ES09933 Client: hmbio										Sample ID: BZ Sample Name: BZ										Analysis: R1, M12, B4, PAHs, ASBESTOS ID, b1									
Contact Name: Roger Gibbs Phone No: 0418 814 810										Project Manager: Roger Gibbs Email: roger.gibbs@colony.com.au										Sample ID: BZ Sample Name: BZ										Analysis: R1, M12, B4, PAHs, ASBESTOS ID, b1									
Special Directions: 										Project Manager: Roger Gibbs Email: roger.gibbs@colony.com.au										Sample ID: BZ Sample Name: BZ										Analysis: R1, M12, B4, PAHs, ASBESTOS ID, b1									
Purchase Order: 200427CEV										Project Manager: Roger Gibbs Email: roger.gibbs@colony.com.au										Sample ID: BZ Sample Name: BZ										Analysis: R1, M12, B4, PAHs, ASBESTOS ID, b1									
Client Sample ID										Sample ID										Sample Name										Sample Description									
BH_0.1										BH_0.5										BH_1.0										BH_1.5									
BH_1.5										BH_2.0										BH_2.5										BH_3.0									
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Tyrone Gowans

From: Savini Suduwelli Kondage
Sent: Tuesday, 14 February 2023 9:35 AM
To: #AU_CAU001_EnviroSampleVic
Subject: FW: Eskys pick up
Attachments: Coffey 754-MELGEE309933.xlsm; ALS eCOC.xlsx

Follow Up Flag: Follow up
Flag Status: Completed

INFO: INTERNAL EMAIL - Sent from your own Eurofins email domain.

Hi Tyrone,

These samples are getting picked up now.

Kind Regards,
Savini Suduwelli

Phone : +61 3 8564 5051
Mobile : +61 447 222 760
Email : SaviniSuduwelli@eurofins.com

From: PonceRios, Gilberto <Gilberto.PonceRios@tetrattech.com>
Sent: Tuesday, 14 February 2023 9:23 AM
To: Savini Suduwelli Kondage <SaviniSuduwelli@eurofins.com>; Enviro Reception <EnviroReception@eurofins.com>
Cc: Gibbs, Roger <Roger.Gibbs@tetrattech.com>; Zhang, Bochen <BOCHEN.ZHANG@tetrattech.com>
Subject: Eskys pick up

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.

Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

Morning all,

Can you please help us organising eskies pick up from our warehouse in Abbotsford? Ready to go, please see Eurofins and ALS COCs for details

Gilberto Ponce | Environmental Scientist
Mobile [+61 423 562 362](tel:+61423562362) | Business [+61 3 9290 7159](tel:+61392907159) | gilberto.poncerios@tetrattech.com



*I acknowledge the Wurundjeri peoples on whose country I live and work. I pay my respects to their Elders past, present, emerging and future.
Tetra Tech Coffey recognises Aboriginal and Torres Strait Islanders as the first peoples of Australia, and we respect their cultural heritage, traditional knowledge and customs associated with their ancestral lands and waters.
Through this acknowledgement we commit to ongoing learning and understanding on our journey to reconciliation.
Artist: Chloe Little*

#963522
1517
A

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Page 1 of 3

Chain of custody
Issued: 5 April 2022
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Page 2 of 3

Chain of custody
Issued: 5 April 2022
UNCONTROLLED WHEN PRINTED

Page 3 of 3

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Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: Roger Gibbs

Report 963822-S
Project name Ivanhoe
Project ID 754-MELGE309933
Received Date Feb 14, 2023

Client Sample ID			BH1_0.1	BH1_0.5	BH1_1.0	BH1_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033428	M23-Fe0033429	M23-Fe0033430	M23-Fe0033431
Date Sampled			Feb 06, 2023	Feb 06, 2023	Feb 06, 2023	Feb 06, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Hexachlorobutadiene	0.5	mg/kg	< 0.5	-	-	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	-	-
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	-	-	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	-	-



Work Order	: EM2302189	Page	: 1 of 2
Client	: TETRA TECH COFFEY PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR ROGER GIBBS	Contact	: Graeme Jablonskas
Address	: Level 11/2 Riverside Quay Southbank 3006	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9609
Project	: 754-MELGE309933	Date Samples Received	: 09-Feb-2023 11:40
Order number	: ----	Date Analysis Commenced	: 15-Feb-2023
C-O-C number	: ----	Issue Date	: 16-Feb-2023 14:11
Sampler	: AG		
Site	:		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

This Certificate of Analysis contains the following information:

- Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

RIGHT SOLUTIONS | RIGHT PARTNER



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 ^ = This result is computed from individual analyte detections at or above the level of reporting
 ø = ALS is not NATA accredited for these tests.
 ~ = Indicates an estimated value.

Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Sample ID

				QC2	----	----	----	----
Sampling date / time				08-Feb-2023 14:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2302189-001	-----	-----	-----	-----
Result				Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	0.004	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	0.007	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.012	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.182	----	----	----	----
Boron	7440-42-8	0.05	mg/L	<0.05	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----

QUALITY CONTROL REPORT

Work Order	: EM2302189	Page	: 1 of 5
Client	: TETRA TECH COFFEY PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR ROGER GIBBS	Contact	: Graeme Jablonskas
Address	: Level 11/2 Riverside Quay Southbank 3006	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9609
Project	: 754-MELGE309933	Date Samples Received	: 09-Feb-2023
Order number	: ----	Date Analysis Commenced	: 15-Feb-2023
C-O-C number	: ----	Issue Date	: 16-Feb-2023
Sampler	: AG		
Site	:		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4872845)									
EM2302215-022	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EM2302165-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.003	0.002	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.002	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG035F: Dissolved Mercury by FIMS (QC Lot: 4872846)									
EM2302165-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
Laboratory sample ID		Sample ID	Method: Compound	CAS Number	Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low High
EG035F: Dissolved Mercury by FIMS (QCLot: 4872846) - continued							
EM2302165-001		Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	83.3	70.0 120

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2302189	Page	: 1 of 4
Client	: TETRA TECH COFFEY PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR ROGER GIBBS	Telephone	: +6138549 9609
Project	: 754-MELGE309933	Date Samples Received	: 09-Feb-2023
Site	:	Issue Date	: 16-Feb-2023
Sampler	: AG	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QC2	08-Feb-2023	----	----	----	15-Feb-2023	07-Aug-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QC2	08-Feb-2023	----	----	----	16-Feb-2023	08-Mar-2023	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	13	15.38	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Page ____ of ____

TETRA TECH
COFFEY

Consigning Office: Southbank

Report Results to: Roger Gibbs

Mobile: +61 418 614 610

Email: roger.gibbs@tetrattech.com

Invoices to: RG

Phone: +61 3 9290 7000

Email:

Project No: 754-MELGE309933

Task No:

Project Name: Heidelberg Road Development Laboratory:

Sampler's Name: AS

Project Manager: RG

Quote number (if different to current quoted prices):

Special Instructions: *SEND QC2 TO ALS*

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	B19A PFAS/PFOA/6:2FTS 8:2FTS	R1 MISA (MISA) TRH/BTEXN	Aggressive Suite	NOTES
① *	B901551I QC1	08/02	13:35	W	2V, 2A, 4P, 1PFAS	STND	X	X	X	
	QC2	I	14:00	I	2V, 1A, 1P, 1PFAS	I		X		
	QC3	I	14:00	I	2V, 1A, 1P, 1PFAS	I		X		
	QC4	I	14:30	I	2V, 1A	I		X		
			10:20	I	2V	I			X	FORWARD TO ALS *

Environmental Division
Melbourne

Work Order Reference

EM2302189



Telephone: +61-3-8549 9600

DATE: 8/2/23

TIME: 5:40pm

COURIER:

TEMPERATURE 11.0 ± 1.3 °C

ATTEMP TO CHILL: YES NO

Emily D

RELINQUISHED BY

Name: Adi Saxeem

Date: 08/02

Coffey

Time: 15:48

Name: Emily D

Date: 9/2/23

Company: Eurofins

Time: 8:00am

RECEIVED BY

Name:

Company:

Date:

Time:

Name: Scott

Date: 9/2/23

Company: ALS

Time: 1140

Sample Receipt Advice: (Lab Use Only)

All Samples Received in Good Condition ☐All Documentation is in Proper Order ☐Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Client Sample ID			BH1_0.1	BH1_0.5	BH1_1.0	BH1_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033428	M23-Fe0033429	M23-Fe0033430	M23-Fe0033431
Date Sampled			Feb 06, 2023	Feb 06, 2023	Feb 06, 2023	Feb 06, 2023
Test/Reference	LOR	Unit				
Volatile Organics						
Allyl chloride	0.5	mg/kg	< 0.5	-	-	-
Benzene	0.1	mg/kg	< 0.1	-	-	-
Bromobenzene	0.5	mg/kg	< 0.5	-	-	-
Bromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromoform	0.5	mg/kg	< 0.5	-	-	-
Bromomethane	0.5	mg/kg	< 0.5	-	-	-
Carbon disulfide	0.5	mg/kg	< 0.5	-	-	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	-	-
Chlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Chloroethane	0.5	mg/kg	< 0.5	-	-	-
Chloroform	0.5	mg/kg	< 0.5	-	-	-
Chloromethane	0.5	mg/kg	< 0.5	-	-	-
cis-1,2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
cis-1,3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Dibromomethane	0.5	mg/kg	< 0.5	-	-	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
Iodomethane	0.5	mg/kg	< 0.5	-	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
Methylene Chloride	0.5	mg/kg	< 0.5	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Styrene	0.5	mg/kg	< 0.5	-	-	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
trans-1,2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
trans-1,3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Trichloroethene	0.5	mg/kg	< 0.5	-	-	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	-	-
Vinyl chloride	0.5	mg/kg	< 0.5	-	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-	-
Total MAH*	0.5	mg/kg	< 0.5	-	-	-
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	-	-	-
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	-	-	-
4-Bromofluorobenzene (surr.)	1	%	60	-	-	-
Toluene-d8 (surr.)	1	%	53	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{NO2}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH1_0.1	BH1_0.5	BH1_1.0	BH1_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033428	M23-Fe0033429	M23-Fe0033430	M23-Fe0033431
Date Sampled			Feb 06, 2023	Feb 06, 2023	Feb 06, 2023	Feb 06, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	95	73	96	74
p-Terphenyl-d14 (surr.)	1	%	88	66	53	89
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4,4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4,4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4,4'-DDT	0.05	mg/kg	< 0.05	-	-	-
α-HCH	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
β-HCH	0.05	mg/kg	< 0.05	-	-	-
δ-HCH	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
γ-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	0.5	mg/kg	< 0.5	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchloroendate (surr.)	1	%	58	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	50	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-

Client Sample ID			BH1_0.1	BH1_0.5	BH1_1.0	BH1_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033428	M23-Fe0033429	M23-Fe0033430	M23-Fe0033431
Date Sampled			Feb 06, 2023	Feb 06, 2023	Feb 06, 2023	Feb 06, 2023
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchloredate (surr.)	1	%	58	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	50	-	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-	-
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
2,4,5-Trichlorophenol	1	mg/kg	< 1	-	-	-
2,4,6-Trichlorophenol	1	mg/kg	< 1	-	-	-
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	-	-
Pentachlorophenol	1	mg/kg	< 1	-	-	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-	-	-
Total Halogenated Phenol*	1	mg/kg	< 1	-	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	-	-	-
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	-	-	-
2-Nitrophenol	1.0	mg/kg	< 1	-	-	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	-
Total cresols*	0.5	mg/kg	< 0.5	-	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-	-
Dinoseb	20	mg/kg	< 20	-	-	-
Phenol	0.5	mg/kg	< 0.5	-	-	-
Phenol-d6 (surr.)	1	%	66	-	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	-
Chromium (hexavalent)	1	mg/kg	< 1	-	-	-
Cyanide (total)	5	mg/kg	< 5	-	-	-
Fluoride	100	mg/kg	150	-	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.4	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	7.3	< 2	< 2	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	34	20	19	-
Copper	5	mg/kg	16	< 5	< 5	-
Lead	5	mg/kg	19	5.9	5.6	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Molybdenum	5	mg/kg	< 5	< 5	< 5	-
Nickel	5	mg/kg	34	< 5	< 5	-
Selenium	2	mg/kg	< 2	< 2	< 2	-
Silver	2	mg/kg	< 2	< 2	< 2	-
Tin	10	mg/kg	< 10	< 10	< 10	-
Zinc	5	mg/kg	79	< 5	< 5	-
Sample Properties						
% Moisture	1	%	10.0	7.5	10	7.7

Client Sample ID			BH1_0.1	BH1_0.5	BH1_1.0	BH1_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033428	M23-Fe0033429	M23-Fe0033430	M23-Fe0033431
Date Sampled			Feb 06, 2023	Feb 06, 2023	Feb 06, 2023	Feb 06, 2023
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	58	50	-

Client Sample ID			BH1_1.6	BH1_2.9	BH1_3.5	BH2_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033432	M23-Fe0033433	M23-Fe0033434	M23-Fe0033435
Date Sampled			Feb 06, 2023	Feb 06, 2023	Feb 06, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	-	< 20
TRH C15-C28	50	mg/kg	-	-	-	< 50
TRH C29-C36	50	mg/kg	-	-	-	< 50
TRH C10-C36 (Total)	50	mg/kg	-	-	-	< 50
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	-	-	< 20
TRH >C10-C16	50	mg/kg	-	-	-	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	-	-	< 50
TRH >C16-C34	100	mg/kg	-	-	-	< 100
TRH >C34-C40	100	mg/kg	-	-	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	-	-	< 100
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	-	-	< 0.5
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	-	1.2
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	-	-	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID			BH1_1.6	BH1_2.9	BH1_3.5	BH2_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033432	M23-Fe0033433	M23-Fe0033434	M23-Fe0033435
Date Sampled			Feb 06, 2023	Feb 06, 2023	Feb 06, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH*	0.5	mg/kg	-	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	-	71
p-Terphenyl-d14 (surr.)	1	%	-	-	-	81
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	2.5	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	21	25	35	14
Copper	5	mg/kg	< 5	< 5	11	< 5
Lead	5	mg/kg	7.4	7.2	7.6	6.3
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5	< 5
Nickel	5	mg/kg	< 5	5.2	26	< 5
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Silver	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	< 5	< 5	19	9.3
Sample Properties						
% Moisture	1	%	7.1	10	9.5	4.1
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	110

Client Sample ID			BH2_0.5	BH2_0.9	BH2_1.2	BH2_1.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033436	M23-Fe0033437	M23-Fe0033438	M23-Fe0033439
Date Sampled			Feb 08, 2023	Feb 08, 2023	Feb 08, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	-	-	-
TRH C10-C14	20	mg/kg	< 20	-	-	-
TRH C15-C28	50	mg/kg	< 50	-	-	-
TRH C29-C36	50	mg/kg	< 50	-	-	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-	-	-
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	-	-	-
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	-	-	-
TRH >C16-C34	100	mg/kg	< 100	-	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	-	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	BH2_0.5 Soil M23- Fe0033436 Feb 08, 2023	BH2_0.9 Soil M23- Fe0033437 Feb 08, 2023	BH2_1.2 Soil M23- Fe0033438 Feb 08, 2023	BH2_1.8 Soil M23- Fe0033439 Feb 08, 2023
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Hexachlorobutadiene	0.5	mg/kg	< 0.5	-	-	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	-	-
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	-	-	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	-	-
Allyl chloride	0.5	mg/kg	< 0.5	-	-	-
Benzene	0.1	mg/kg	< 0.1	-	-	-
Bromobenzene	0.5	mg/kg	< 0.5	-	-	-
Bromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromoform	0.5	mg/kg	< 0.5	-	-	-
Bromomethane	0.5	mg/kg	< 0.5	-	-	-
Carbon disulfide	0.5	mg/kg	< 0.5	-	-	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	-	-
Chlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Chloroethane	0.5	mg/kg	< 0.5	-	-	-
Chloroform	0.5	mg/kg	< 0.5	-	-	-
Chloromethane	0.5	mg/kg	< 0.5	-	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Dibromomethane	0.5	mg/kg	< 0.5	-	-	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
Iodomethane	0.5	mg/kg	< 0.5	-	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
Methylene Chloride	0.5	mg/kg	< 0.5	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Styrene	0.5	mg/kg	< 0.5	-	-	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-

Client Sample ID			BH2_0.5	BH2_0.9	BH2_1.2	BH2_1.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033436	M23-Fe0033437	M23-Fe0033438	M23-Fe0033439
Date Sampled			Feb 08, 2023	Feb 08, 2023	Feb 08, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Volatile Organics						
trans-1,2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
trans-1,3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Trichloroethene	0.5	mg/kg	< 0.5	-	-	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	-	-
Vinyl chloride	0.5	mg/kg	< 0.5	-	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-	-
Total MAH*	0.5	mg/kg	< 0.5	-	-	-
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	-	-	-
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	-	-	-
4-Bromofluorobenzene (surr.)	1	%	105	-	-	-
Toluene-d8 (surr.)	1	%	100	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	81	-	75	-
p-Terphenyl-d14 (surr.)	1	%	72	-	89	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4,4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4,4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4,4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-HCH	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-HCH	0.05	mg/kg	< 0.05	-	-	-
d-HCH	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	BH2_0.5 Soil M23- Fe0033436 Feb 08, 2023	BH2_0.9 Soil M23- Fe0033437 Feb 08, 2023	BH2_1.2 Soil M23- Fe0033438 Feb 08, 2023	BH2_1.8 Soil M23- Fe0033439 Feb 08, 2023
Organochlorine Pesticides						
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	0.5	mg/kg	< 0.5	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchloredate (surr.)	1	%	97	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	113	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchloredate (surr.)	1	%	97	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	113	-	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-	-
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
2,4,5-Trichlorophenol	1	mg/kg	< 1	-	-	-
2,4,6-Trichlorophenol	1	mg/kg	< 1	-	-	-
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	-	-
Pentachlorophenol	1	mg/kg	< 1	-	-	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-	-	-
Total Halogenated Phenol*	1	mg/kg	< 1	-	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	-	-	-
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	-	-	-
2-Nitrophenol	1.0	mg/kg	< 1	-	-	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	-
Total cresols*	0.5	mg/kg	< 0.5	-	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-	-
Dinoseb	20	mg/kg	< 20	-	-	-
Phenol	0.5	mg/kg	< 0.5	-	-	-
Phenol-d6 (surr.)	1	%	83	-	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	-

Client Sample ID			BH2_0.5	BH2_0.9	BH2_1.2	BH2_1.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033436	M23-Fe0033437	M23-Fe0033438	M23-Fe0033439
Date Sampled			Feb 08, 2023	Feb 08, 2023	Feb 08, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Chromium (hexavalent)	1	mg/kg	< 1	-	-	-
Cyanide (total)	5	mg/kg	< 5	-	-	-
Fluoride	100	mg/kg	< 100	-	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.4	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	6.5	-	3.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	7.5	60	-	43
Copper	5	mg/kg	< 5	7.6	-	< 5
Lead	5	mg/kg	< 5	17	-	8.4
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	-	< 5
Nickel	5	mg/kg	< 5	18	-	6.0
Selenium	2	mg/kg	< 2	< 2	-	< 2
Silver	2	mg/kg	< 2	< 2	-	< 2
Tin	10	mg/kg	< 10	< 10	-	< 10
Zinc	5	mg/kg	6.6	16	-	5.0
Sample Properties						
% Moisture	1	%	3.5	14	7.0	10.0

Client Sample ID			BH3_0.1	BH3_0.5	BH3_0.8	BH3_1.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033440	M23-Fe0033441	M23-Fe0033442	M23-Fe0033443
Date Sampled			Feb 09, 2023	Feb 09, 2023	Feb 09, 2023	Feb 09, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Hexachlorobutadiene	0.5	mg/kg	< 0.5	-	-	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-

Client Sample ID			BH3_0.1	BH3_0.5	BH3_0.8	BH3_1.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033440	M23-Fe0033441	M23-Fe0033442	M23-Fe0033443
Date Sampled			Feb 09, 2023	Feb 09, 2023	Feb 09, 2023	Feb 09, 2023
Test/Reference	LOR	Unit				
Volatile Organics						
1,2-Dibromoethane	0.5	mg/kg	< 0.5	-	-	-
1,2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1,2-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1,2-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1,2,3-Trichloropropane	0.5	mg/kg	< 0.5	-	-	-
1,2,4-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1,3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1,3-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1,3,5-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1,4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	-	-
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	-	-	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	-	-
Allyl chloride	0.5	mg/kg	< 0.5	-	-	-
Benzene	0.1	mg/kg	< 0.1	-	-	-
Bromobenzene	0.5	mg/kg	< 0.5	-	-	-
Bromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromoform	0.5	mg/kg	< 0.5	-	-	-
Bromomethane	0.5	mg/kg	< 0.5	-	-	-
Carbon disulfide	0.5	mg/kg	< 0.5	-	-	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	-	-
Chlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Chloroethane	0.5	mg/kg	< 0.5	-	-	-
Chloroform	0.5	mg/kg	< 0.5	-	-	-
Chloromethane	0.5	mg/kg	< 0.5	-	-	-
cis-1,2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
cis-1,3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Dibromomethane	0.5	mg/kg	< 0.5	-	-	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
Iodomethane	0.5	mg/kg	< 0.5	-	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
Methylene Chloride	0.5	mg/kg	< 0.5	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Styrene	0.5	mg/kg	< 0.5	-	-	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
trans-1,2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
trans-1,3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Trichloroethene	0.5	mg/kg	< 0.5	-	-	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	-	-
Vinyl chloride	0.5	mg/kg	< 0.5	-	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-	-
Total MAH*	0.5	mg/kg	< 0.5	-	-	-
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	-	-	-

Client Sample ID			BH3_0.1	BH3_0.5	BH3_0.8	BH3_1.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033440	M23-Fe0033441	M23-Fe0033442	M23-Fe0033443
Date Sampled			Feb 09, 2023	Feb 09, 2023	Feb 09, 2023	Feb 09, 2023
Test/Reference	LOR	Unit				
Volatile Organics						
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	-	-	-
4-Bromofluorobenzene (surr.)	1	%	104	-	-	-
Toluene-d8 (surr.)	1	%	78	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	72	73	69	75
p-Terphenyl-d14 (surr.)	1	%	62	80	88	97
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4,4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4,4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4,4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-HCH	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-HCH	0.05	mg/kg	< 0.05	-	-	-
d-HCH	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-

Client Sample ID			BH3_0.1	BH3_0.5	BH3_0.8	BH3_1.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033440	M23-Fe0033441	M23-Fe0033442	M23-Fe0033443
Date Sampled			Feb 09, 2023	Feb 09, 2023	Feb 09, 2023	Feb 09, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Toxaphene	0.5	mg/kg	< 0.5	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	74	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	77	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	74	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	77	-	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-	-
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
2,4,5-Trichlorophenol	1	mg/kg	< 1	-	-	-
2,4,6-Trichlorophenol	1	mg/kg	< 1	-	-	-
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	-	-
Pentachlorophenol	1	mg/kg	< 1	-	-	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-	-	-
Total Halogenated Phenol*	1	mg/kg	< 1	-	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	-	-	-
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	-	-	-
2-Nitrophenol	1.0	mg/kg	< 1	-	-	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	-
Total cresols*	0.5	mg/kg	< 0.5	-	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-	-
Dinoseb	20	mg/kg	< 20	-	-	-
Phenol	0.5	mg/kg	< 0.5	-	-	-
Phenol-d6 (surr.)	1	%	125	-	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-	-
Chromium (hexavalent)	1	mg/kg	< 1	-	-	-
Cyanide (total)	5	mg/kg	< 5	-	-	-
Fluoride	100	mg/kg	< 100	-	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	8.1	-	-	-

Client Sample ID			BH3_0.1	BH3_0.5	BH3_0.8	BH3_1.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033440	M23-Fe0033441	M23-Fe0033442	M23-Fe0033443
Date Sampled			Feb 09, 2023	Feb 09, 2023	Feb 09, 2023	Feb 09, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	19	23	27	-
Copper	5	mg/kg	< 5	< 5	< 5	-
Lead	5	mg/kg	18	14	11	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Molybdenum	5	mg/kg	< 5	< 5	< 5	-
Nickel	5	mg/kg	11	7.2	5.9	-
Selenium	2	mg/kg	< 2	< 2	< 2	-
Silver	2	mg/kg	< 2	< 2	< 2	-
Tin	10	mg/kg	< 10	< 10	< 10	-
Zinc	5	mg/kg	16	8.0	< 5	-
Sample Properties						
% Moisture	1	%	5.4	6.1	7.0	4.3
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	59	103	-

Client Sample ID			BH3_1.8	BH3_2.4	QC01
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033444	M23-Fe0033445	M23-Fe0033446
Date Sampled			Feb 09, 2023	Feb 09, 2023	Feb 06, 2023
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons					
TRH C6-C9	20	mg/kg	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	-	< 50
TRH C6-C10	20	mg/kg	< 20	-	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	< 100
Volatile Organics					
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	-
1.2.4-Trichlorobenzene	0.5	mg/kg	< 0.5	-	-
Hexachlorobutadiene	0.5	mg/kg	< 0.5	-	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	BH3_1.8 Soil M23- Fe0033444 Feb 09, 2023	BH3_2.4 Soil M23- Fe0033445 Feb 09, 2023	QC01 Soil M23- Fe0033446 Feb 06, 2023
Volatile Organics					
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	-
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	-	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	-
Allyl chloride	0.5	mg/kg	< 0.5	-	-
Benzene	0.1	mg/kg	< 0.1	-	-
Bromobenzene	0.5	mg/kg	< 0.5	-	-
Bromochloromethane	0.5	mg/kg	< 0.5	-	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-	-
Bromoform	0.5	mg/kg	< 0.5	-	-
Bromomethane	0.5	mg/kg	< 0.5	-	-
Carbon disulfide	0.5	mg/kg	< 0.5	-	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	-
Chlorobenzene	0.5	mg/kg	< 0.5	-	-
Chloroethane	0.5	mg/kg	< 0.5	-	-
Chloroform	0.5	mg/kg	< 0.5	-	-
Chloromethane	0.5	mg/kg	< 0.5	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-	-
Dibromomethane	0.5	mg/kg	< 0.5	-	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-
Iodomethane	0.5	mg/kg	< 0.5	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-
Methylene Chloride	0.5	mg/kg	< 0.5	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-
Styrene	0.5	mg/kg	< 0.5	-	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-	-
Toluene	0.1	mg/kg	< 0.1	-	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-
Trichloroethene	0.5	mg/kg	< 0.5	-	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	-
Vinyl chloride	0.5	mg/kg	< 0.5	-	-

Client Sample ID			BH3_1.8	BH3_2.4	QC01
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033444	M23-Fe0033445	M23-Fe0033446
Date Sampled			Feb 09, 2023	Feb 09, 2023	Feb 06, 2023
Test/Reference	LOR	Unit			
Volatile Organics					
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-
Total MAH*	0.5	mg/kg	< 0.5	-	-
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5	-	-
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5	-	-
4-Bromofluorobenzene (surr.)	1	%	66	-	-
Toluene-d8 (surr.)	1	%	59	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	< 0.5
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	82	-	91
p-Terphenyl-d14 (surr.)	1	%	73	-	97
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-
4,4'-DDD	0.05	mg/kg	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	< 0.05	-	-
4,4'-DDT	0.05	mg/kg	< 0.05	-	-
a-HCH	0.05	mg/kg	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-
b-HCH	0.05	mg/kg	< 0.05	-	-
d-HCH	0.05	mg/kg	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-

Client Sample ID			BH3_1.8	BH3_2.4	QC01
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033444	M23-Fe0033445	M23-Fe0033446
Date Sampled			Feb 09, 2023	Feb 09, 2023	Feb 06, 2023
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-
Toxaphene	0.5	mg/kg	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	87	-	-
Tetrachloro-m-xylene (surr.)	1	%	91	-	-
Polychlorinated Biphenyls					
Aroclor-1016	0.1	mg/kg	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	87	-	-
Tetrachloro-m-xylene (surr.)	1	%	91	-	-
Phenols (Halogenated)					
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-
2,4,5-Trichlorophenol	1	mg/kg	< 1	-	-
2,4,6-Trichlorophenol	1	mg/kg	< 1	-	-
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	-	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-	-
Pentachlorophenol	1	mg/kg	< 1	-	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-	-
Total Halogenated Phenol*	1	mg/kg	< 1	-	-
Phenols (non-Halogenated)					
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	-	-
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	-	-
2-Nitrophenol	1.0	mg/kg	< 1	-	-
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-
2,4-Dinitrophenol	5	mg/kg	< 5	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-
Total cresols*	0.5	mg/kg	< 0.5	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-
Dinoseb	20	mg/kg	< 20	-	-
Phenol	0.5	mg/kg	< 0.5	-	-
Phenol-d6 (surr.)	1	%	143	-	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-	-

Client Sample ID			BH3_1.8	BH3_2.4	QC01
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			M23-Fe0033444	M23-Fe0033445	M23-Fe0033446
Date Sampled			Feb 09, 2023	Feb 09, 2023	Feb 06, 2023
Test/Reference	LOR	Unit			
Chromium (hexavalent)	1	mg/kg	< 1	-	-
Cyanide (total)	5	mg/kg	< 5	-	-
Fluoride	100	mg/kg	< 100	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.2	-	-
Heavy Metals					
Arsenic	2	mg/kg	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	34	23
Copper	5	mg/kg	< 5	< 5	< 5
Lead	5	mg/kg	5.5	11	7.0
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Molybdenum	5	mg/kg	< 5	< 5	< 5
Nickel	5	mg/kg	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2
Silver	2	mg/kg	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10
Zinc	5	mg/kg	< 5	< 5	< 5
Sample Properties					
% Moisture	1	%	5.1	5.7	16
BTEX					
Benzene	0.1	mg/kg	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	54

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 17, 2023	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 17, 2023	14 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Melbourne	Feb 17, 2023	14 Days
Vic EPA 1828.2 Table 3 (Solids)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 17, 2023	14 Days
Volatile Organics - Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)	Melbourne	Feb 17, 2023	7 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Feb 17, 2023	14 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)	Melbourne	Feb 17, 2023	14 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)	Melbourne	Feb 17, 2023	28 Days
Phenols (Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Feb 17, 2023	14 Days
Phenols (non-Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Feb 17, 2023	14 Days
Chromium (hexavalent) - Method: LTM-INO-4100 Hexavalent Chromium by Spectrometric detection	Melbourne	Feb 17, 2023	28 Days
Cyanide (total) - Method: LTM-INO-4020 Total Free WAD Cyanide by CFA	Melbourne	Feb 17, 2023	14 Days
Fluoride - Method: LTM-INO-4150 Determination of Total Fluoride PART B – ISE	Melbourne	Feb 18, 2023	28 Days
pH (1:5 Aqueous extract at 25 °C as rec.) - Method: LTM-GEN-7090 pH in soil by ISE	Melbourne	Feb 17, 2023	7 Days
Metals IWRG 621 : Metals M12 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Feb 17, 2023	28 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Melbourne	Feb 15, 2023	14 Days

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Order No.:
Report #: 963822
Phone: 03 9290 7000
Fax:

Received: Feb 14, 2023 5:29 PM
Due: Feb 21, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Project Name: Ivanhoe
Project ID: 754-MELGE309933

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Asbestos Absence / Presence	HOLD	Polycyclic Aromatic Hydrocarbons	Metals IWRG 621 : Metals M12	Moisture Set	Eurofins Suite B4	Vic EPA 1828.2 Table 3 (Solids)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	BH1_0.1	Feb 06, 2023		Soil	M23-Fe0033428					X		X	
2	BH1_0.5	Feb 06, 2023		Soil	M23-Fe0033429				X	X	X		
3	BH1_1.0	Feb 06, 2023		Soil	M23-Fe0033430				X	X	X		
4	BH1_1.5	Feb 06, 2023		Soil	M23-Fe0033431			X		X			
5	BH1_1.6	Feb 06, 2023		Soil	M23-Fe0033432				X	X			
6	BH1_2.9	Feb 06, 2023		Soil	M23-Fe0033433				X	X			
7	BH1_3.5	Feb 06, 2023		Soil	M23-Fe0033434				X	X			
8	BH2_0.1	Feb 08, 2023		Soil	M23-Fe0033435				X	X	X		
9	BH2_0.5	Feb 08, 2023		Soil	M23-Fe0033436					X		X	
10	BH2_0.9	Feb 08, 2023		Soil	M23-Fe0033437				X	X			
11	BH2_1.2	Feb 08, 2023		Soil	M23-Fe0033438			X		X			
12	BH2_1.8	Feb 08, 2023		Soil	M23-Fe0033439				X	X			
13	BH3_0.1	Feb 09, 2023		Soil	M23-Fe0033440					X		X	

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Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
14	BH3_0.5	Feb 09, 2023		Soil	M23-Fe0033441				X	X	X		
15	BH3_0.8	Feb 09, 2023		Soil	M23-Fe0033442				X	X	X		
16	BH3_1.4	Feb 09, 2023		Soil	M23-Fe0033443			X		X			
17	BH3_1.8	Feb 09, 2023		Soil	M23-Fe0033444					X		X	
18	BH3_2.4	Feb 09, 2023		Soil	M23-Fe0033445				X	X			
19	QC01	Feb 06, 2023		Soil	M23-Fe0033446				X	X	X		
20	QC03	Feb 06, 2023		Water	M23-Fe0033447				X		X		
21	QC04	Feb 06, 2023		Water	M23-Fe0033448								X
22	QC06	Feb 08, 2023		Water	M23-Fe0033449				X		X		
23	QC07	Feb 08, 2023		Water	M23-Fe0033450								X
24	QC11	Feb 09, 2023		Water	M23-Fe0033451				X		X		
25	QC13	Feb 09, 2023		Water	M23-Fe0033452								X
26	S1	Not Provided		Building Materials	M23-Fe0033453	X							
27	BH1_2.1	Feb 06, 2023		Soil	M23-Fe0033454		X						
28	BH1_3.2	Feb 06, 2023		Soil	M23-Fe0033455		X						

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Sample Detail						Asbestos Absence / Presence	HOLD	Polycyclic Aromatic Hydrocarbons	Metals IWRG 621 : Metals M12	Moisture Set	Eurofins Suite B4	Vic EPA 1828.2 Table 3 (Solids)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
29	BH2_2.4	Feb 08, 2023		Soil	M23-Fe0033456		X						
30	BH3_2.9	Feb 09, 2023		Soil	M23-Fe0033457		X						
31	QC05	Feb 06, 2023		Water	M23-Fe0033458		X						
32	QC08	Feb 08, 2023		Water	M23-Fe0033459		X						
33	QC09	Feb 09, 2023		Soil	M23-Fe0033460		X						
34	QC10	Feb 09, 2023		Soil	M23-Fe0033461		X						
35	QC12	Feb 09, 2023		Water	M23-Fe0033462		X						
Test Counts						1	9	3	15	19	9	4	3

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trichlorobenzene	mg/kg	< 0.5			0.5	Pass	
Hexachlorobutadiene	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 2			2	Pass	
Tin	mg/kg	< 10			10	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	97			70-130	Pass	
TRH C10-C14	%	88			70-130	Pass	
TRH C6-C10	%	95			70-130	Pass	
TRH >C10-C16	%	89			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	76			70-130	Pass	
1.1.1-Trichloroethane	%	78			70-130	Pass	
1.2-Dichlorobenzene	%	93			70-130	Pass	
1.2-Dichloroethane	%	97			70-130	Pass	
Benzene	%	82			70-130	Pass	
Ethylbenzene	%	77			70-130	Pass	
m&p-Xylenes	%	78			70-130	Pass	
Toluene	%	81			70-130	Pass	
Trichloroethene	%	80			70-130	Pass	
Xylenes - Total*	%	79			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	99			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	114			70-130	Pass	
Acenaphthylene	%	112			70-130	Pass	
Anthracene	%	93			70-130	Pass	
Benz(a)anthracene	%	106			70-130	Pass	
Benzo(a)pyrene	%	109			70-130	Pass	
Benzo(b&j)fluoranthene	%	98			70-130	Pass	
Benzo(g,h,i)perylene	%	128			70-130	Pass	
Benzo(k)fluoranthene	%	127			70-130	Pass	
Chrysene	%	118			70-130	Pass	
Dibenz(a,h)anthracene	%	130			70-130	Pass	
Fluoranthene	%	112			70-130	Pass	
Fluorene	%	108			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	93			70-130	Pass	
Naphthalene	%	118			70-130	Pass	
Phenanthrene	%	95			70-130	Pass	
Pyrene	%	123			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	108			70-130	Pass	
4,4'-DDD	%	109			70-130	Pass	
4,4'-DDE	%	112			70-130	Pass	
4,4'-DDT	%	102			70-130	Pass	
a-HCH	%	103			70-130	Pass	
Aldrin	%	111			70-130	Pass	
b-HCH	%	77			70-130	Pass	
d-HCH	%	112			70-130	Pass	
Dieldrin	%	125			70-130	Pass	
Endosulfan I	%	103			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	130			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	%	118			70-130	Pass	
Endrin aldehyde	%	105			70-130	Pass	
Endrin ketone	%	116			70-130	Pass	
g-HCH (Lindane)	%	103			70-130	Pass	
Heptachlor	%	124			70-130	Pass	
Heptachlor epoxide	%	108			70-130	Pass	
Hexachlorobenzene	%	107			70-130	Pass	
Methoxychlor	%	97			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	99			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	104			25-140	Pass	
2,4-Dichlorophenol	%	105			25-140	Pass	
2,4,5-Trichlorophenol	%	82			25-140	Pass	
2,4,6-Trichlorophenol	%	74			25-140	Pass	
2,6-Dichlorophenol	%	114			25-140	Pass	
4-Chloro-3-methylphenol	%	93			25-140	Pass	
Pentachlorophenol	%	44			25-140	Pass	
Tetrachlorophenols - Total	%	110			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	%	120			25-140	Pass	
2-Methyl-4,6-dinitrophenol	%	32			25-140	Pass	
2-Nitrophenol	%	86			25-140	Pass	
2,4-Dimethylphenol	%	112			25-140	Pass	
2,4-Dinitrophenol	%	34			25-140	Pass	
2-Methylphenol (o-Cresol)	%	81			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	95			25-140	Pass	
4-Nitrophenol	%	51			25-140	Pass	
Dinoseb	%	37			25-140	Pass	
Phenol	%	95			25-140	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	111			70-130	Pass	
Cyanide (total)	%	117			70-130	Pass	
Fluoride	%	112			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			80-120	Pass	
Cadmium	%	105			80-120	Pass	
Chromium	%	106			80-120	Pass	
Copper	%	100			80-120	Pass	
Lead	%	102			80-120	Pass	
Mercury	%	95			80-120	Pass	
Molybdenum	%	104			80-120	Pass	
Nickel	%	98			80-120	Pass	
Selenium	%	103			80-120	Pass	
Silver	%	105			80-120	Pass	
Tin	%	105			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons				Result 1				
TRH C6-C9	M23-Fe0032497	NCP	%	107		70-130	Pass	
TRH C6-C10	M23-Fe0032497	NCP	%	106		70-130	Pass	
Spike - % Recovery								
Volatile Organics				Result 1				
1.1-Dichloroethene	M23-Fe0032497	NCP	%	79		70-130	Pass	
1.1.1-Trichloroethane	M23-Fe0032497	NCP	%	77		70-130	Pass	
1.2-Dichlorobenzene	M23-Fe0032497	NCP	%	95		70-130	Pass	
1.2-Dichloroethane	M23-Fe0032497	NCP	%	89		70-130	Pass	
Benzene	M23-Fe0032497	NCP	%	81		70-130	Pass	
Ethylbenzene	M23-Fe0032497	NCP	%	83		70-130	Pass	
m&p-Xylenes	M23-Fe0032497	NCP	%	83		70-130	Pass	
o-Xylene	M23-Fe0032497	NCP	%	84		70-130	Pass	
Toluene	M23-Fe0032497	NCP	%	84		70-130	Pass	
Trichloroethene	M23-Fe0032497	NCP	%	84		70-130	Pass	
Xylenes - Total*	M23-Fe0032497	NCP	%	83		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	M23-Fe0032497	NCP	%	91		70-130	Pass	
Spike - % Recovery								
Organochlorine Pesticides				Result 1				
Chlordanes - Total	M23-Fe0035570	NCP	%	110		70-130	Pass	
4.4'-DDD	M23-Fe0035570	NCP	%	116		70-130	Pass	
4.4'-DDE	M23-Fe0035570	NCP	%	129		70-130	Pass	
4.4'-DDT	M23-Fe0035570	NCP	%	83		70-130	Pass	
a-HCH	M23-Fe0035570	NCP	%	113		70-130	Pass	
Aldrin	M23-Fe0035570	NCP	%	102		70-130	Pass	
b-HCH	M23-Fe0035570	NCP	%	103		70-130	Pass	
d-HCH	M23-Fe0035570	NCP	%	81		70-130	Pass	
Dieldrin	M23-Fe0035570	NCP	%	104		70-130	Pass	
Endosulfan I	M23-Fe0035570	NCP	%	125		70-130	Pass	
Endosulfan II	M23-Fe0035570	NCP	%	123		70-130	Pass	
Endosulfan sulphate	M23-Fe0035570	NCP	%	88		70-130	Pass	
Endrin	M23-Fe0035570	NCP	%	88		70-130	Pass	
Endrin aldehyde	M23-Fe0035570	NCP	%	101		70-130	Pass	
Endrin ketone	M23-Fe0035570	NCP	%	117		70-130	Pass	
g-HCH (Lindane)	M23-Fe0035570	NCP	%	124		70-130	Pass	
Heptachlor	M23-Fe0035570	NCP	%	79		70-130	Pass	
Heptachlor epoxide	M23-Fe0035570	NCP	%	105		70-130	Pass	
Hexachlorobenzene	M23-Fe0035570	NCP	%	119		70-130	Pass	
Methoxychlor	M23-Fe0035570	NCP	%	82		70-130	Pass	
Spike - % Recovery								
Polychlorinated Biphenyls				Result 1				
Aroclor-1016	M23-Fe0036100	NCP	%	109		70-130	Pass	
Aroclor-1260	M23-Fe0036100	NCP	%	105		70-130	Pass	
Spike - % Recovery								
Phenols (non-Halogenated)				Result 1				
2-Methyl-4.6-dinitrophenol	M23-Fe0024185	NCP	%	97		30-130	Pass	
2.4-Dinitrophenol	M23-Fe0037417	NCP	%	33		30-130	Pass	
Spike - % Recovery								
				Result 1				
Chromium (hexavalent)	M23-Fe0037498	NCP	%	114		70-130	Pass	
Cyanide (total)	M23-Fe0032497	NCP	%	128		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	M23-Fe0033438	CP	%	112		70-130	Pass	
Acenaphthylene	M23-Fe0033438	CP	%	109		70-130	Pass	
Anthracene	M23-Fe0033438	CP	%	103		70-130	Pass	
Benzo(a)anthracene	M23-Fe0033438	CP	%	87		70-130	Pass	
Benzo(a)pyrene	M23-Fe0033438	CP	%	109		70-130	Pass	
Benzo(b&j)fluoranthene	M23-Fe0033438	CP	%	100		70-130	Pass	
Benzo(g,h,i)perylene	M23-Fe0033438	CP	%	96		70-130	Pass	
Benzo(k)fluoranthene	M23-Fe0033438	CP	%	102		70-130	Pass	
Chrysene	M23-Fe0033438	CP	%	120		70-130	Pass	
Dibenz(a,h)anthracene	M23-Fe0033438	CP	%	97		70-130	Pass	
Fluoranthene	M23-Fe0033438	CP	%	113		70-130	Pass	
Fluorene	M23-Fe0033438	CP	%	118		70-130	Pass	
Indeno(1,2,3-cd)pyrene	M23-Fe0033438	CP	%	97		70-130	Pass	
Naphthalene	M23-Fe0033438	CP	%	104		70-130	Pass	
Phenanthrene	M23-Fe0033438	CP	%	100		70-130	Pass	
Pyrene	M23-Fe0033438	CP	%	114		70-130	Pass	
Spike - % Recovery								
Phenols (Halogenated)				Result 1				
2-Chlorophenol	M23-Fe0033438	CP	%	108		30-130	Pass	
2,4-Dichlorophenol	M23-Fe0033438	CP	%	117		30-130	Pass	
2,4,5-Trichlorophenol	M23-Fe0033438	CP	%	40		30-130	Pass	
2,4,6-Trichlorophenol	M23-Fe0033438	CP	%	61		30-130	Pass	
2,6-Dichlorophenol	M23-Fe0033438	CP	%	81		30-130	Pass	
4-Chloro-3-methylphenol	M23-Fe0033438	CP	%	86		30-130	Pass	
Pentachlorophenol	M23-Fe0033438	CP	%	112		30-130	Pass	
Tetrachlorophenols - Total	M23-Fe0033438	CP	%	51		30-130	Pass	
Spike - % Recovery								
Phenols (non-Halogenated)				Result 1				
2-Cyclohexyl-4,6-dinitrophenol	M23-Fe0033438	CP	%	32		30-130	Pass	
2-Nitrophenol	M23-Fe0033438	CP	%	97		30-130	Pass	
2,4-Dimethylphenol	M23-Fe0033438	CP	%	111		30-130	Pass	
2-Methylphenol (o-Cresol)	M23-Fe0033438	CP	%	87		30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M23-Fe0033438	CP	%	59		30-130	Pass	
4-Nitrophenol	M23-Fe0033438	CP	%	81		30-130	Pass	
Dinoseb	M23-Fe0033438	CP	%	73		30-130	Pass	
Phenol	M23-Fe0033438	CP	%	104		30-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	M23-Fe0033439	CP	%	100		75-125	Pass	
Cadmium	M23-Fe0033439	CP	%	116		75-125	Pass	
Chromium	M23-Fe0033439	CP	%	93		75-125	Pass	
Copper	M23-Fe0033439	CP	%	108		75-125	Pass	
Lead	M23-Fe0033439	CP	%	103		75-125	Pass	
Mercury	M23-Fe0033439	CP	%	109		75-125	Pass	
Molybdenum	M23-Fe0033439	CP	%	106		75-125	Pass	
Nickel	M23-Fe0033439	CP	%	109		75-125	Pass	
Selenium	M23-Fe0033439	CP	%	102		75-125	Pass	
Silver	M23-Fe0033439	CP	%	115		75-125	Pass	
Tin	M23-Fe0033439	CP	%	114		75-125	Pass	
Zinc	M23-Fe0033439	CP	%	107		75-125	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons				Result 1				

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	M23-Fe0033444	CP	%	78			70-130	Pass	
TRH >C10-C16	M23-Fe0033444	CP	%	79			70-130	Pass	
Spike - % Recovery									
				Result 1					
Fluoride	M23-Fe0033444	CP	%	86			70-130	Pass	
Spike - % Recovery									
Heavy Metals									
				Result 1					
Arsenic	M23-Fe0033444	CP	%	101			75-125	Pass	
Cadmium	M23-Fe0033444	CP	%	117			75-125	Pass	
Chromium	M23-Fe0033444	CP	%	117			75-125	Pass	
Copper	M23-Fe0033444	CP	%	115			75-125	Pass	
Lead	M23-Fe0033444	CP	%	115			75-125	Pass	
Mercury	M23-Fe0033444	CP	%	115			75-125	Pass	
Molybdenum	M23-Fe0033444	CP	%	114			75-125	Pass	
Nickel	M23-Fe0033444	CP	%	119			75-125	Pass	
Selenium	M23-Fe0033444	CP	%	106			75-125	Pass	
Silver	M23-Fe0033444	CP	%	119			75-125	Pass	
Tin	M23-Fe0033444	CP	%	122			75-125	Pass	
Zinc	M23-Fe0033444	CP	%	116			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	M23-Fe0033428	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M23-Fe0033428	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M23-Fe0033428	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16	M23-Fe0033428	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M23-Fe0033428	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M23-Fe0033428	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&i)fluoranthene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M23-Fe0033428	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
b-HCH	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-HCH	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M23-Fe0033428	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	M23-Fe0033428	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	M23-Fe0033428	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	M23-Fe0033428	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	M23-Fe0033428	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	M23-Fe0033428	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	M23-Fe0033428	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	M23-Fe0033428	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	M23-Fe0033428	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M23-Fe0033428	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M23-Fe0033428	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M23-Fe0033428	CP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M23-Fe0033428	CP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M23-Fe0033428	CP	mg/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M23-Fe0033428	CP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M23-Fe0033428	CP	mg/kg	< 5	< 5	<1	30%	Pass
2-Nitrophenol	M23-Fe0033428	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M23-Fe0033428	CP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M23-Fe0033428	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M23-Fe0033428	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M23-Fe0033428	CP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M23-Fe0033428	CP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M23-Fe0033428	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chromium (hexavalent)	M23-Fe0036864	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Cyanide (total)	M23-Fe0033375	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Fluoride	M23-Fe0033428	CP	mg/kg	150	190	27	30%	Pass
pH (1:5 Aqueous extract at 25 °C as rec.)	M23-Ja0032169	NCP	pH Units	5.9	5.8	pass	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M23-Fe0033430	CP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	M23-Fe0033430	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M23-Fe0033430	CP	mg/kg	19	20	1.8	30%	Pass
Copper	M23-Fe0033430	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	M23-Fe0033430	CP	mg/kg	5.6	5.4	3.6	30%	Pass
Mercury	M23-Fe0033430	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M23-Fe0033430	CP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M23-Fe0033430	CP	mg/kg	< 5	< 5	<1	30%	Pass
Selenium	M23-Fe0033430	CP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M23-Fe0033430	CP	mg/kg	< 2	< 2	<1	30%	Pass
Tin	M23-Fe0033430	CP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M23-Fe0033430	CP	mg/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	M23-Fe0033431	CP	%	7.7	7.6	1.5	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD		
TRH C6-C9	M23-Fe0033436	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C10-C14	M23-Fe0033436	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	M23-Fe0033436	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	M23-Fe0033436	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C6-C10	M23-Fe0033436	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M23-Fe0033436	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M23-Fe0033436	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	M23-Fe0033436	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.1-Dichloroethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.4-Trichlorobenzene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Hexachlorobutadiene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1-Dichloroethene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.1-Trichloroethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.1.2-Tetrachloroethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2-Trichloroethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2.2-Tetrachloroethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dibromoethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichlorobenzene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloroethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloropropane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.3-Trichloropropane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.4-Trimethylbenzene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichlorobenzene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichloropropane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3.5-Trimethylbenzene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.4-Dichlorobenzene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Butanone (MEK)	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2-Propanone (Acetone)	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chlorotoluene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Methyl-2-pentanone (MIBK)	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Allyl chloride	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzene	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Bromobenzene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromochloromethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromodichloromethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
Bromoform	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Bromomethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon disulfide	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Carbon Tetrachloride	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chlorobenzene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloroform	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chloromethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1,2-Dichloroethene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
cis-1,3-Dichloropropene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromochloromethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibromomethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorodifluoromethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Ethylbenzene	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Iodomethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Isopropyl benzene (Cumene)	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
m&p-Xylenes	M23-Fe0033436	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methylene Chloride	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
o-Xylene	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Styrene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachloroethene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Toluene	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
trans-1,2-Dichloroethene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
trans-1,3-Dichloropropene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloroethene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichlorofluoromethane	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Vinyl chloride	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Xylenes - Total*	M23-Fe0033436	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-HCH	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-HCH	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-HCH	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M23-Fe0033436	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	M23-Fe0033436	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	M23-Fe0033436	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	M23-Fe0033436	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	M23-Fe0033436	CP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	M23-Fe0033436	CP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	M23-Fe0033436	CP	mg/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M23-Fe0033436	CP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M23-Fe0033436	CP	mg/kg	< 5	< 5	<1	30%	Pass
2-Nitrophenol	M23-Fe0033436	CP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	M23-Fe0033436	CP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	M23-Fe0033436	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M23-Fe0033436	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	M23-Fe0033436	CP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	M23-Fe0033436	CP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	M23-Fe0033436	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M23-Fe0033437	CP	mg/kg	6.5	5.1	23	30%	Pass
Cadmium	M23-Fe0033437	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M23-Fe0033437	CP	mg/kg	60	51	16	30%	Pass
Copper	M23-Fe0033437	CP	mg/kg	7.6	8.5	11	30%	Pass
Lead	M23-Fe0033437	CP	mg/kg	17	18	4.8	30%	Pass
Mercury	M23-Fe0033437	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M23-Fe0033437	CP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M23-Fe0033437	CP	mg/kg	18	15	17	30%	Pass
Selenium	M23-Fe0033437	CP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M23-Fe0033437	CP	mg/kg	< 2	< 2	<1	30%	Pass
Tin	M23-Fe0033437	CP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M23-Fe0033437	CP	mg/kg	16	16	3.1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M23-Fe0033439	CP	mg/kg	3.0	3.0	1.7	30%	Pass
Cadmium	M23-Fe0033439	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M23-Fe0033439	CP	mg/kg	43	44	2.1	30%	Pass
Copper	M23-Fe0033439	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	M23-Fe0033439	CP	mg/kg	8.4	8.4	<1	30%	Pass
Mercury	M23-Fe0033439	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M23-Fe0033439	CP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M23-Fe0033439	CP	mg/kg	6.0	6.1	3.0	30%	Pass
Selenium	M23-Fe0033439	CP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M23-Fe0033439	CP	mg/kg	< 2	< 2	<1	30%	Pass
Tin	M23-Fe0033439	CP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M23-Fe0033439	CP	mg/kg	5.0	5.4	7.6	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	M23-Fe0033441	CP	%	6.1	6.1	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M23-Fe0033442	CP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	M23-Fe0033442	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M23-Fe0033442	CP	mg/kg	27	27	<1	30%	Pass
Copper	M23-Fe0033442	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	M23-Fe0033442	CP	mg/kg	11	12	2.7	30%	Pass
Mercury	M23-Fe0033442	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Molybdenum	M23-Fe0033442	CP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M23-Fe0033442	CP	mg/kg	5.9	5.9	<1	30%	Pass
Selenium	M23-Fe0033442	CP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M23-Fe0033442	CP	mg/kg	< 2	< 2	<1	30%	Pass
Tin	M23-Fe0033442	CP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M23-Fe0033442	CP	mg/kg	< 5	< 5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Fluoride	M23-Fe0033444	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M23-Fe0033444	CP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	M23-Fe0033444	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M23-Fe0033444	CP	mg/kg	22	22	1.3	30%	Pass
Copper	M23-Fe0033444	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	M23-Fe0033444	CP	mg/kg	5.5	5.5	<1	30%	Pass
Mercury	M23-Fe0033444	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Molybdenum	M23-Fe0033444	CP	mg/kg	< 5	< 5	<1	30%	Pass
Nickel	M23-Fe0033444	CP	mg/kg	< 5	< 5	<1	30%	Pass
Selenium	M23-Fe0033444	CP	mg/kg	< 2	< 2	<1	30%	Pass
Silver	M23-Fe0033444	CP	mg/kg	< 2	< 2	<1	30%	Pass
Tin	M23-Fe0033444	CP	mg/kg	< 10	< 10	<1	30%	Pass
Zinc	M23-Fe0033444	CP	mg/kg	< 5	< 5	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	N/A
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Callum McEwan	Analytical Services Manager
Sheha Prakash	Senior Analyst-Asbestos
Joseph Edouard	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Metal
Linda Chouman	Senior Analyst-Sample Properties
Mary Makarios	Senior Analyst-Inorganic
Joseph Edouard	Senior Analyst-Organic
Edward Lee	Senior Analyst-Organic
Harry Bacalis	Senior Analyst-Volatile
Scott Beddoes	Senior Analyst-Inorganic
Carroll Lee	Senior Analyst-Volatile



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Tetra Tech Coffey Pty Ltd VIC
Level 11, 2 Riverside Quay,
Southbank
VIC 3006



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: Roger Gibbs

Report 963822-W
Project name Ivanhoe
Project ID 754-MELGE309933
Received Date Feb 14, 2023

Client Sample ID			QC03	QC04	QC06	QC07
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M23-Fe0033447	M23-Fe0033448	M23-Fe0033449	M23-Fe0033450
Date Sampled			Feb 06, 2023	Feb 06, 2023	Feb 08, 2023	Feb 08, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	-	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	-	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	-	< 0.1	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	-	< 0.1	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	-	< 0.05	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	-	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	-	< 0.1	-
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	87	107	91	87
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.01	mg/L	< 0.01	-	< 0.01	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	-	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	-	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	-	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	< 0.001	-
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	-	< 0.001	-
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	-	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	-	< 0.001	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	-	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	-	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	-	< 0.001	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	QC03 Water M23- Fe0033447 Feb 06, 2023	QC04 Water M23- Fe0033448 Feb 06, 2023	QC06 Water M23- Fe0033449 Feb 08, 2023	QC07 Water M23- Fe0033450 Feb 08, 2023
Polycyclic Aromatic Hydrocarbons						
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	-	< 0.001	-
Phenanthrene	0.001	mg/L	< 0.001	-	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	-	< 0.001	-
Total PAH*	0.001	mg/L	< 0.001	-	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	99	-	91	-
p-Terphenyl-d14 (surr.)	1	%	89	-	134	-
Heavy Metals						
Arsenic	0.001	mg/L	0.001	-	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	-	< 0.0002	-
Chromium	0.001	mg/L	< 0.001	-	< 0.001	-
Copper	0.001	mg/L	< 0.001	-	< 0.001	-
Lead	0.001	mg/L	< 0.001	-	< 0.001	-
Mercury	0.0001	mg/L	< 0.0001	-	< 0.0001	-
Molybdenum	0.005	mg/L	< 0.005	-	< 0.005	-
Nickel	0.001	mg/L	< 0.001	-	< 0.001	-
Selenium	0.001	mg/L	< 0.001	-	< 0.001	-
Silver	0.005	mg/L	< 0.005	-	< 0.005	-
Tin	0.005	mg/L	< 0.005	-	< 0.005	-
Zinc	0.005	mg/L	< 0.005	-	< 0.005	-
Volatile Organics						
Naphthalene ^{N02}	0.01	mg/L	-	< 0.01	-	< 0.01

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	QC11 Water M23- Fe0033451 Feb 09, 2023	QC13 Water M23- Fe0033452 Feb 09, 2023
Total Recoverable Hydrocarbons				
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	-
BTEX				
Benzene	0.001	mg/L	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001

Client Sample ID			QC11	QC13
Sample Matrix			Water	Water
Eurofins Sample No.			M23-Fe0033451	M23-Fe0033452
Date Sampled			Feb 09, 2023	Feb 09, 2023
Test/Reference	LOR	Unit		
BTEX				
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	80	87
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.01	mg/L	< 0.01	-
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.001	mg/L	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	-
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	-
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	-
Phenanthrene	0.001	mg/L	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	-
Total PAH*	0.001	mg/L	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	109	-
p-Terphenyl-d14 (surr.)	1	%	75	-
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	-
Chromium	0.001	mg/L	< 0.001	-
Copper	0.001	mg/L	< 0.001	-
Lead	0.001	mg/L	< 0.001	-
Mercury	0.0001	mg/L	< 0.0001	-
Molybdenum	0.005	mg/L	< 0.005	-
Nickel	0.001	mg/L	< 0.001	-
Selenium	0.001	mg/L	< 0.001	-
Silver	0.005	mg/L	< 0.005	-
Tin	0.005	mg/L	< 0.005	-
Zinc	0.005	mg/L	< 0.005	-
Volatile Organics				
Naphthalene ^{N02}	0.01	mg/L	-	< 0.01

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 16, 2023	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 16, 2023	7 Days
Total Recoverable Hydrocarbons - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 16, 2023	7 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Melbourne	Feb 16, 2023	14 Days
Vic EPA 1828.2 Table 3 (Solids)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 16, 2023	7 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Feb 16, 2023	7 Days
Metals IWRG 621 : Metals M12 - Method:	Melbourne	Feb 16, 2023	28 Days

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Project Name: Ivanhoe
Project ID: 754-MELGE309933

Order No.:
Report #: 963822
Phone: 03 9290 7000
Fax:

Received: Feb 14, 2023 5:29 PM
Due: Feb 21, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Asbestos Absence / Presence	HOLD	Polycyclic Aromatic Hydrocarbons	Metals IWRG 621 : Metals M12	Moisture Set	Eurofins Suite B4	Vic EPA 1828.2 Table 3 (Solids)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	BH1_0.1	Feb 06, 2023		Soil	M23-Fe0033428					X		X	
2	BH1_0.5	Feb 06, 2023		Soil	M23-Fe0033429				X	X	X		
3	BH1_1.0	Feb 06, 2023		Soil	M23-Fe0033430				X	X	X		
4	BH1_1.5	Feb 06, 2023		Soil	M23-Fe0033431			X		X			
5	BH1_1.6	Feb 06, 2023		Soil	M23-Fe0033432				X	X			
6	BH1_2.9	Feb 06, 2023		Soil	M23-Fe0033433				X	X			
7	BH1_3.5	Feb 06, 2023		Soil	M23-Fe0033434				X	X			
8	BH2_0.1	Feb 08, 2023		Soil	M23-Fe0033435				X	X	X		
9	BH2_0.5	Feb 08, 2023		Soil	M23-Fe0033436					X		X	
10	BH2_0.9	Feb 08, 2023		Soil	M23-Fe0033437				X	X			
11	BH2_1.2	Feb 08, 2023		Soil	M23-Fe0033438			X		X			
12	BH2_1.8	Feb 08, 2023		Soil	M23-Fe0033439				X	X			
13	BH3_0.1	Feb 09, 2023		Soil	M23-Fe0033440					X		X	

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006
Project Name: Ivanhoe
Project ID: 754-MELGE309933

Order No.:
Report #: 963822
Phone: 03 9290 7000
Fax:

Received: Feb 14, 2023 5:29 PM
Due: Feb 21, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Asbestos Absence /Presence	HOLD	Polycyclic Aromatic Hydrocarbons	Metals IWRG 621 : Metals M12	Moisture Set	Eurofins Suite B4	Vic EPA 1828.2 Table 3 (Solids)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
14	BH3_0.5	Feb 09, 2023		Soil	M23-Fe0033441				X	X	X		
15	BH3_0.8	Feb 09, 2023		Soil	M23-Fe0033442				X	X	X		
16	BH3_1.4	Feb 09, 2023		Soil	M23-Fe0033443			X		X			
17	BH3_1.8	Feb 09, 2023		Soil	M23-Fe0033444					X		X	
18	BH3_2.4	Feb 09, 2023		Soil	M23-Fe0033445				X	X			
19	QC01	Feb 06, 2023		Soil	M23-Fe0033446				X	X	X		
20	QC03	Feb 06, 2023		Water	M23-Fe0033447				X		X		
21	QC04	Feb 06, 2023		Water	M23-Fe0033448								X
22	QC06	Feb 08, 2023		Water	M23-Fe0033449				X		X		
23	QC07	Feb 08, 2023		Water	M23-Fe0033450								X
24	QC11	Feb 09, 2023		Water	M23-Fe0033451				X		X		
25	QC13	Feb 09, 2023		Water	M23-Fe0033452								X
26	S1	Not Provided		Building Materials	M23-Fe0033453	X							
27	BH1_2.1	Feb 06, 2023		Soil	M23-Fe0033454		X						
28	BH1_3.2	Feb 06, 2023		Soil	M23-Fe0033455		X						

Company Name: Tetra Tech Coffey Pty Ltd VIC
Address: Level 11, 2 Riverside Quay,
Southbank
VIC 3006

Project Name: Ivanhoe
Project ID: 754-MELGE309933

Order No.:
Report #: 963822
Phone: 03 9290 7000
Fax:

Received: Feb 14, 2023 5:29 PM
Due: Feb 21, 2023
Priority: 5 Day
Contact Name: Roger Gibbs

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Asbestos Absence / Presence	HOLD	Polycyclic Aromatic Hydrocarbons	Metals IWRG 621 : Metals M12	Moisture Set	Eurofins Suite B4	Vic EPA 1828.2 Table 3 (Solids)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X
29	BH2_2.4	Feb 08, 2023		Soil	M23-Fe0033456		X						
30	BH3_2.9	Feb 09, 2023		Soil	M23-Fe0033457		X						
31	QC05	Feb 06, 2023		Water	M23-Fe0033458		X						
32	QC08	Feb 08, 2023		Water	M23-Fe0033459		X						
33	QC09	Feb 09, 2023		Soil	M23-Fe0033460		X						
34	QC10	Feb 09, 2023		Soil	M23-Fe0033461		X						
35	QC12	Feb 09, 2023		Water	M23-Fe0033462		X						
Test Counts						1	9	3	15	19	9	4	3

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Molybdenum	mg/L	< 0.005			0.005	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Silver	mg/L	< 0.005			0.005	Pass	
Tin	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	124			70-130	Pass	
TRH C10-C14	%	122			70-130	Pass	
TRH C6-C10	%	112			70-130	Pass	
TRH >C10-C16	%	126			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	92			70-130	Pass	
Toluene	%	93			70-130	Pass	
Ethylbenzene	%	91			70-130	Pass	
m&p-Xylenes	%	91			70-130	Pass	
Xylenes - Total*	%	92			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	78			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	78			70-130	Pass	
Acenaphthylene	%	74			70-130	Pass	
Anthracene	%	89			70-130	Pass	
Benz(a)anthracene	%	84			70-130	Pass	
Benzo(a)pyrene	%	93			70-130	Pass	
Benzo(b&j)fluoranthene	%	87			70-130	Pass	
Benzo(g,h,i)perylene	%	74			70-130	Pass	
Benzo(k)fluoranthene	%	108			70-130	Pass	
Chrysene	%	102			70-130	Pass	
Dibenz(a,h)anthracene	%	72			70-130	Pass	
Fluoranthene	%	73			70-130	Pass	
Fluorene	%	74			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	80			70-130	Pass	
Naphthalene	%	119			70-130	Pass	
Phenanthrene	%	73			70-130	Pass	
Pyrene	%	73			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	98			80-120	Pass	
Cadmium	%	103			80-120	Pass	
Chromium	%	97			80-120	Pass	
Copper	%	100			80-120	Pass	
Lead	%	99			80-120	Pass	
Mercury	%	89			80-120	Pass	
Molybdenum	%	93			80-120	Pass	
Nickel	%	99			80-120	Pass	
Selenium	%	98			80-120	Pass	
Silver	%	96			80-120	Pass	
Tin	%	99			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons				Result 1				
TRH C6-C9	M23-Fe0037056	NCP	%	117		70-130	Pass	
TRH C10-C14	B23-Fe0024069	NCP	%	80		70-130	Pass	
TRH C6-C10	M23-Fe0037056	NCP	%	101		70-130	Pass	
TRH >C10-C16	B23-Fe0024069	NCP	%	82		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	M23-Fe0037056	NCP	%	90		70-130	Pass	
Toluene	M23-Fe0037056	NCP	%	88		70-130	Pass	
Ethylbenzene	M23-Fe0037056	NCP	%	87		70-130	Pass	
m&p-Xylenes	M23-Fe0037056	NCP	%	86		70-130	Pass	
o-Xylene	M23-Fe0037056	NCP	%	88		70-130	Pass	
Xylenes - Total*	M23-Fe0037056	NCP	%	87		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	M23-Fe0037056	NCP	%	76		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	B23-Fe0030370	NCP	%	100		70-130	Pass	
Acenaphthylene	B23-Fe0030370	NCP	%	85		70-130	Pass	
Anthracene	B23-Fe0030370	NCP	%	91		70-130	Pass	
Benz(a)anthracene	B23-Fe0030370	NCP	%	95		70-130	Pass	
Benzo(a)pyrene	B23-Fe0030370	NCP	%	115		70-130	Pass	
Benzo(b&j)fluoranthene	B23-Fe0030370	NCP	%	97		70-130	Pass	
Benzo(g,h,i)perylene	B23-Fe0030370	NCP	%	80		70-130	Pass	
Benzo(k)fluoranthene	B23-Fe0030370	NCP	%	81		70-130	Pass	
Chrysene	B23-Fe0030370	NCP	%	101		70-130	Pass	
Dibenz(a,h)anthracene	B23-Fe0030370	NCP	%	81		70-130	Pass	
Fluoranthene	B23-Fe0030370	NCP	%	87		70-130	Pass	
Fluorene	B23-Fe0030370	NCP	%	88		70-130	Pass	
Indeno(1,2,3-cd)pyrene	B23-Fe0030370	NCP	%	82		70-130	Pass	
Naphthalene	B23-Fe0030370	NCP	%	99		70-130	Pass	
Phenanthrene	B23-Fe0030370	NCP	%	80		70-130	Pass	
Pyrene	B23-Fe0030370	NCP	%	85		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	M23-Fe0032891	NCP	%	92		75-125	Pass	
Cadmium	M23-Fe0032891	NCP	%	100		75-125	Pass	
Chromium	M23-Fe0032891	NCP	%	89		75-125	Pass	
Copper	M23-Fe0032891	NCP	%	90		75-125	Pass	
Lead	M23-Fe0032891	NCP	%	91		75-125	Pass	
Mercury	M23-Fe0032891	NCP	%	120		75-125	Pass	
Molybdenum	M23-Fe0032891	NCP	%	75		75-125	Pass	
Nickel	M23-Fe0032891	NCP	%	90		75-125	Pass	
Selenium	M23-Fe0032891	NCP	%	96		75-125	Pass	
Silver	M23-Fe0032891	NCP	%	86		75-125	Pass	
Tin	M23-Fe0032891	NCP	%	79		75-125	Pass	
Zinc	M23-Fe0032891	NCP	%	89		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M23-Fe0037055	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M23-Fe0028364	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M23-Fe0028364	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M23-Fe0028364	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	M23-Fe0037055	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M23-Fe0028364	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M23-Fe0028364	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M23-Fe0028364	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M23-Fe0037055	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M23-Fe0037055	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M23-Fe0037055	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M23-Fe0037055	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M23-Fe0037055	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	M23-Fe0037055	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M23-Fe0037055	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M23-Fe0028220	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M23-Fe0032891	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M23-Fe0032891	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M23-Fe0032891	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M23-Fe0032891	NCP	mg/L	0.002	< 0.001	150	30%	Fail	Q15
Lead	M23-Fe0032891	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M23-Fe0032891	NCP	mg/L	0.0003	0.0003	25	30%	Pass	
Molybdenum	M23-Fe0032891	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nickel	M23-Fe0032891	NCP	mg/L	0.003	0.002	19	30%	Pass	
Selenium	M23-Fe0032891	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Silver	M23-Fe0032891	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Tin	M23-Fe0032891	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	M23-Fe0032891	NCP	mg/L	0.032	0.027	19	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	N/A
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Callum McEwan	Analytical Services Manager
Carroll Lee	Senior Analyst-Volatile
Edward Lee	Senior Analyst-Organic
Harry Bacalis	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Metal



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.001			0.001	Pass	
Hexachlorobutadiene	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
trans-1,2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1,3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4,4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4,4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4,4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1221	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB*	mg/L	< 0.005			0.005	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2,4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2,4,5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2,4,6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2,6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4,6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2,4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2,4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Chloride	mg/L	< 1			1	Pass	
Chromium (hexavalent)	mg/L	< 0.005			0.005	Pass	
Fluoride	mg/L	< 0.5			0.5	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Molybdenum (filtered)	mg/L	< 0.005			0.005	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Silver (filtered)	mg/L	< 0.005			0.005	Pass	
Tin (filtered)	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTriDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	110			70-130	Pass	
TRH C10-C14	%	92			70-130	Pass	
TRH C6-C10	%	117			70-130	Pass	
TRH >C10-C16	%	91			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	125			70-130	Pass	
1.1.1-Trichloroethane	%	119			70-130	Pass	
1.2-Dichlorobenzene	%	118			70-130	Pass	
1.2-Dichloroethane	%	116			70-130	Pass	
Benzene	%	90			70-130	Pass	
Ethylbenzene	%	98			70-130	Pass	
m&p-Xylenes	%	99			70-130	Pass	
Toluene	%	101			70-130	Pass	
Trichloroethene	%	84			70-130	Pass	
Xylenes - Total*	%	99			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	121			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	112			70-130	Pass	
Acenaphthylene	%	106			70-130	Pass	
Anthracene	%	101			70-130	Pass	
Benz(a)anthracene	%	88			70-130	Pass	
Benzo(a)pyrene	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	%	91			70-130	Pass	
Benzo(g,h,i)perylene	%	89			70-130	Pass	
Benzo(k)fluoranthene	%	96			70-130	Pass	
Chrysene	%	93			70-130	Pass	
Dibenz(a,h)anthracene	%	96			70-130	Pass	
Fluoranthene	%	114			70-130	Pass	
Fluorene	%	105			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	97			70-130	Pass	
Naphthalene	%	107			70-130	Pass	
Phenanthrene	%	109			70-130	Pass	
Pyrene	%	112			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	91			70-130	Pass	
4,4'-DDD	%	104			70-130	Pass	
4,4'-DDE	%	81			70-130	Pass	
4,4'-DDT	%	83			70-130	Pass	
a-HCH	%	89			70-130	Pass	
Aldrin	%	89			70-130	Pass	
b-HCH	%	98			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
d-HCH	%	100			70-130	Pass	
Dieldrin	%	100			70-130	Pass	
Endosulfan I	%	97			70-130	Pass	
Endosulfan II	%	103			70-130	Pass	
Endosulfan sulphate	%	83			70-130	Pass	
Endrin	%	112			70-130	Pass	
Endrin aldehyde	%	78			70-130	Pass	
Endrin ketone	%	98			70-130	Pass	
g-HCH (Lindane)	%	112			70-130	Pass	
Heptachlor	%	99			70-130	Pass	
Heptachlor epoxide	%	92			70-130	Pass	
Hexachlorobenzene	%	86			70-130	Pass	
Methoxychlor	%	96			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	107			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	83			25-140	Pass	
2,4-Dichlorophenol	%	83			25-140	Pass	
2,4,5-Trichlorophenol	%	83			25-140	Pass	
2,4,6-Trichlorophenol	%	101			25-140	Pass	
2,6-Dichlorophenol	%	81			25-140	Pass	
4-Chloro-3-methylphenol	%	94			25-140	Pass	
Pentachlorophenol	%	62			25-140	Pass	
Tetrachlorophenols - Total	%	77			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	%	57			25-140	Pass	
2-Methyl-4,6-dinitrophenol	%	53			25-140	Pass	
2-Nitrophenol	%	81			25-140	Pass	
2,4-Dimethylphenol	%	89			25-140	Pass	
2,4-Dinitrophenol	%	80			25-140	Pass	
2-Methylphenol (o-Cresol)	%	66			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	65			25-140	Pass	
4-Nitrophenol	%	77			25-140	Pass	
Dinoseb	%	77			25-140	Pass	
Phenol	%	74			25-140	Pass	
LCS - % Recovery							
Chloride	%	95			70-130	Pass	
Chromium (hexavalent)	%	122			70-130	Pass	
Conductivity (at 25 °C)	%	110			70-130	Pass	
Cyanide (total)	%	79			70-130	Pass	
Fluoride	%	107			70-130	Pass	
Nitrate & Nitrite (as N)	%	112			70-130	Pass	
Phosphate total (as P)	%	94			70-130	Pass	
Sulphate (as SO4)	%	111			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	114			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	98			80-120	Pass	
Beryllium	%	103			80-120	Pass	
Cadmium	%	95			80-120	Pass	
Chromium	%	97			80-120	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Cobalt		%	99			80-120	Pass		
Copper		%	98			80-120	Pass		
Lead		%	95			80-120	Pass		
Manganese		%	99			80-120	Pass		
Mercury		%	104			80-120	Pass		
Nickel		%	100			80-120	Pass		
Selenium		%	98			80-120	Pass		
Zinc		%	99			80-120	Pass		
LCS - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)									
Perfluorobutanoic acid (PFBA)		%	79			50-150	Pass		
Perfluoropentanoic acid (PFPeA)		%	74			50-150	Pass		
Perfluorohexanoic acid (PFHxA)		%	71			50-150	Pass		
Perfluoroheptanoic acid (PFHpA)		%	66			50-150	Pass		
Perfluorooctanoic acid (PFOA)		%	56			50-150	Pass		
Perfluorononanoic acid (PFNA)		%	65			50-150	Pass		
Perfluorodecanoic acid (PFDA)		%	67			50-150	Pass		
Perfluoroundecanoic acid (PFUnDA)		%	62			50-150	Pass		
Perfluorododecanoic acid (PFDoDA)		%	60			50-150	Pass		
Perfluorotridecanoic acid (PFTrDA)		%	70			50-150	Pass		
Perfluorotetradecanoic acid (PFTeDA)		%	67			50-150	Pass		
LCS - % Recovery									
Perfluoroalkyl sulfonamido substances									
Perfluorooctane sulfonamide (FOSA)		%	68			50-150	Pass		
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)		%	78			50-150	Pass		
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)		%	81			50-150	Pass		
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)		%	89			50-150	Pass		
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)		%	64			50-150	Pass		
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)		%	73			50-150	Pass		
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)		%	74			50-150	Pass		
LCS - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)									
Perfluorobutanesulfonic acid (PFBS)		%	59			50-150	Pass		
Perfluorononanesulfonic acid (PFNS)		%	76			50-150	Pass		
Perfluoropropanesulfonic acid (PFPrS)		%	66			50-150	Pass		
Perfluoropentanesulfonic acid (PFPeS)		%	58			50-150	Pass		
Perfluorohexanesulfonic acid (PFHxS)		%	63			50-150	Pass		
Perfluoroheptanesulfonic acid (PFHpS)		%	69			50-150	Pass		
Perfluorooctanesulfonic acid (PFOS)		%	65			50-150	Pass		
Perfluorodecanesulfonic acid (PFDS)		%	71			50-150	Pass		
LCS - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)									
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)		%	60			50-150	Pass		
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)		%	70			50-150	Pass		
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)		%	68			50-150	Pass		
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)		%	79			50-150	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M23-Fe0018099	NCP	%	120			70-130	Pass	
TRH C10-C14	M23-Fe0021859	NCP	%	100			70-130	Pass	
TRH C6-C10	M23-Fe0018099	NCP	%	127			70-130	Pass	
TRH >C10-C16	M23-Fe0021859	NCP	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Volatile Organics				Result 1				
1.1-Dichloroethene	M23-Fe0018099	NCP	%	127		70-130	Pass	
1.1.1-Trichloroethane	M23-Fe0018099	NCP	%	122		70-130	Pass	
1.2-Dichlorobenzene	M23-Fe0018099	NCP	%	122		70-130	Pass	
1.2-Dichloroethane	M23-Fe0018099	NCP	%	126		70-130	Pass	
Benzene	M23-Fe0018099	NCP	%	90		70-130	Pass	
Ethylbenzene	M23-Fe0018099	NCP	%	113		70-130	Pass	
m&p-Xylenes	M23-Fe0018099	NCP	%	116		70-130	Pass	
o-Xylene	M23-Fe0018099	NCP	%	115		70-130	Pass	
Toluene	M23-Fe0018099	NCP	%	113		70-130	Pass	
Trichloroethene	M23-Fe0018099	NCP	%	88		70-130	Pass	
Xylenes - Total*	M23-Fe0018099	NCP	%	115		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	M23-Fe0018099	NCP	%	123		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	M23-Fe0020471	NCP	%	87		70-130	Pass	
Acenaphthylene	M23-Fe0020471	NCP	%	79		70-130	Pass	
Anthracene	M23-Fe0020471	NCP	%	71		70-130	Pass	
Benz(a)anthracene	M23-Fe0020471	NCP	%	89		70-130	Pass	
Benzo(a)pyrene	M23-Fe0020471	NCP	%	87		70-130	Pass	
Benzo(b&j)fluoranthene	M23-Fe0020471	NCP	%	101		70-130	Pass	
Benzo(g,h,i)perylene	M23-Fe0020471	NCP	%	77		70-130	Pass	
Benzo(k)fluoranthene	M23-Fe0020471	NCP	%	84		70-130	Pass	
Chrysene	M23-Fe0020471	NCP	%	95		70-130	Pass	
Dibenz(a,h)anthracene	M23-Fe0020471	NCP	%	86		70-130	Pass	
Fluoranthene	M23-Fe0020471	NCP	%	71		70-130	Pass	
Fluorene	M23-Fe0020471	NCP	%	77		70-130	Pass	
Indeno(1,2,3-cd)pyrene	M23-Fe0020471	NCP	%	84		70-130	Pass	
Naphthalene	M23-Fe0020471	NCP	%	96		70-130	Pass	
Phenanthrene	M23-Fe0020471	NCP	%	74		70-130	Pass	
Pyrene	M23-Fe0020471	NCP	%	72		70-130	Pass	
Spike - % Recovery								
Organochlorine Pesticides				Result 1				
Chlordanes - Total	M23-Fe0020471	NCP	%	82		70-130	Pass	
4,4'-DDD	M23-Fe0020471	NCP	%	134		70-130	Fail	Q08
4,4'-DDE	M23-Fe0020471	NCP	%	72		70-130	Pass	
4,4'-DDT	M23-Fe0020471	NCP	%	78		70-130	Pass	
a-HCH	M23-Fe0020471	NCP	%	90		70-130	Pass	
Aldrin	M23-Fe0020471	NCP	%	86		70-130	Pass	
b-HCH	M23-Fe0020471	NCP	%	93		70-130	Pass	
d-HCH	M23-Fe0020471	NCP	%	86		70-130	Pass	
Dieldrin	M23-Fe0020471	NCP	%	103		70-130	Pass	
Endosulfan I	M23-Fe0020471	NCP	%	94		70-130	Pass	
Endosulfan II	M23-Fe0020471	NCP	%	98		70-130	Pass	
Endosulfan sulphate	M23-Fe0020471	NCP	%	86		70-130	Pass	
Endrin	M23-Fe0020471	NCP	%	95		70-130	Pass	
Endrin aldehyde	M23-Fe0020471	NCP	%	82		70-130	Pass	
Endrin ketone	M23-Fe0020471	NCP	%	92		70-130	Pass	
g-HCH (Lindane)	M23-Fe0020471	NCP	%	111		70-130	Pass	
Heptachlor	M23-Fe0020471	NCP	%	94		70-130	Pass	
Heptachlor epoxide	M23-Fe0020471	NCP	%	79		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	M23-Fe0020471	NCP	%	91		70-130	Pass	
Methoxychlor	M23-Fe0020471	NCP	%	95		70-130	Pass	
Spike - % Recovery								
Phenols (Halogenated)				Result 1				
2-Chlorophenol	M23-Fe0020471	NCP	%	103		30-130	Pass	
2,4-Dichlorophenol	M23-Fe0020471	NCP	%	91		30-130	Pass	
2,4,5-Trichlorophenol	M23-Fe0020471	NCP	%	47		30-130	Pass	
2,4,6-Trichlorophenol	M23-Fe0020471	NCP	%	91		30-130	Pass	
2,6-Dichlorophenol	M23-Fe0020471	NCP	%	90		30-130	Pass	
4-Chloro-3-methylphenol	M23-Fe0020471	NCP	%	103		30-130	Pass	
Pentachlorophenol	M23-Fe0020471	NCP	%	41		30-130	Pass	
Tetrachlorophenols - Total	M23-Fe0020471	NCP	%	84		30-130	Pass	
Spike - % Recovery								
Phenols (non-Halogenated)				Result 1				
2-Cyclohexyl-4,6-dinitrophenol	M23-Fe0020471	NCP	%	39		30-130	Pass	
2-Nitrophenol	M23-Fe0020471	NCP	%	92		30-130	Pass	
2,4-Dimethylphenol	M23-Fe0020471	NCP	%	105		30-130	Pass	
2-Methylphenol (o-Cresol)	M23-Fe0020471	NCP	%	80		30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M23-Fe0020471	NCP	%	79		30-130	Pass	
4-Nitrophenol	M23-Fe0020471	NCP	%	43		30-130	Pass	
Dinoseb	M23-Fe0020471	NCP	%	43		30-130	Pass	
Phenol	M23-Fe0020471	NCP	%	48		30-130	Pass	
Spike - % Recovery								
				Result 1				
Fluoride	M23-Fe0016329	NCP	%	106		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	M23-Fe0017373	NCP	%	104		75-125	Pass	
Arsenic (filtered)	M23-Fe0023073	NCP	%	110		75-125	Pass	
Beryllium	M23-Fe0018104	CP	%	104		75-125	Pass	
Boron	M23-Fe0018104	CP	%	99		75-125	Pass	
Cadmium	M23-Fe0017373	NCP	%	103		75-125	Pass	
Cadmium (filtered)	M23-Fe0023073	NCP	%	99		75-125	Pass	
Chromium	M23-Fe0017373	NCP	%	102		75-125	Pass	
Chromium (filtered)	M23-Fe0023073	NCP	%	107		75-125	Pass	
Cobalt	M23-Fe0018104	CP	%	104		75-125	Pass	
Copper	M23-Fe0017373	NCP	%	92		75-125	Pass	
Copper (filtered)	M23-Fe0023073	NCP	%	105		75-125	Pass	
Lead	M23-Fe0017373	NCP	%	92		75-125	Pass	
Lead (filtered)	M23-Fe0023073	NCP	%	101		75-125	Pass	
Manganese	M23-Fe0018104	CP	%	104		75-125	Pass	
Mercury	M23-Fe0017373	NCP	%	106		75-125	Pass	
Mercury (filtered)	M23-Fe0023073	NCP	%	84		75-125	Pass	
Molybdenum (filtered)	M23-Fe0023073	NCP	%	91		75-125	Pass	
Nickel	M23-Fe0017373	NCP	%	89		75-125	Pass	
Nickel (filtered)	M23-Fe0023073	NCP	%	105		75-125	Pass	
Selenium	M23-Fe0017373	NCP	%	109		75-125	Pass	
Selenium (filtered)	M23-Fe0023073	NCP	%	116		75-125	Pass	
Silver (filtered)	M23-Fe0023073	NCP	%	88		75-125	Pass	
Tin (filtered)	M23-Fe0023073	NCP	%	93		75-125	Pass	
Zinc	M23-Fe0017373	NCP	%	98		75-125	Pass	
Zinc (filtered)	M23-Fe0023073	NCP	%	109		75-125	Pass	
Spike - % Recovery								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1				

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorobutanoic acid (PFBA)	M23-Fe0014000	NCP	%	63			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-Fe0014000	NCP	%	64			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M23-Fe0014000	NCP	%	65			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Fe0014000	NCP	%	64			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-Fe0014000	NCP	%	57			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-Fe0014000	NCP	%	64			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-Fe0014000	NCP	%	68			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Fe0014000	NCP	%	62			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Fe0014000	NCP	%	59			50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	M23-Fe0014000	NCP	%	62			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Fe0014000	NCP	%	62			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-Fe0014000	NCP	%	66			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Fe0014000	NCP	%	57			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Fe0014000	NCP	%	78			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Fe0014000	NCP	%	85			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Fe0014000	NCP	%	71			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Fe0014000	NCP	%	64			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Fe0014000	NCP	%	62			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSA's)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M23-Fe0014000	NCP	%	60			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-Fe0014000	NCP	%	64			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-Fe0014000	NCP	%	68			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-Fe0014000	NCP	%	57			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-Fe0014000	NCP	%	68			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-Fe0014000	NCP	%	62			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-Fe0014000	NCP	%	68			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-Fe0014000	NCP	%	62			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Fe0014000	NCP	%	61			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Fe0014000	NCP	%	70			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Fe0014000	NCP	%	71			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Fe0014000	NCP	%	78			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Beryllium (filtered)	M23-Fe0023073	NCP	%	106			75-125	Pass	
Boron (filtered)	M23-Fe0023073	NCP	%	118			75-125	Pass	
Cobalt (filtered)	M23-Fe0023073	NCP	%	107			75-125	Pass	
Manganese (filtered)	M23-Fe0023073	NCP	%	110			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Beryllium	M23-Fe0017373	NCP	%	117			75-125	Pass	
Boron	M23-Fe0017373	NCP	%	89			75-125	Pass	
Cobalt	M23-Fe0017373	NCP	%	100			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M23-Fe0018098	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M23-Fe0022688	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M23-Fe0022688	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M23-Fe0022688	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	M23-Fe0018098	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M23-Fe0022688	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M23-Fe0022688	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M23-Fe0022688	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trichlorobenzene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Hexachlorobutadiene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	M23-Fe0018098	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Propanone (Acetone)	M23-Fe0018098	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chlorotoluene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M23-Fe0018098	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Allyl chloride	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	M23-Fe0018098	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Carbon disulfide	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
Carbon Tetrachloride	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chlorobenzene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chloroethane	M23-Fe0018098	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Chloroform	M23-Fe0018098	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Chloromethane	M23-Fe0018098	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
cis-1.2-Dichloroethene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
cis-1.3-Dichloropropene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromochloromethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromomethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dichlorodifluoromethane	M23-Fe0018098	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Ethylbenzene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iodomethane	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Isopropyl benzene (Cumene)	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
m&p-Xylenes	M23-Fe0018098	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Methylene Chloride	M23-Fe0018098	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
o-Xylene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Styrene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Tetrachloroethene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Toluene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1.2-Dichloroethene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1.3-Dichloropropene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichloroethene	M23-Fe0018098	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichlorofluoromethane	M23-Fe0018098	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Vinyl chloride	M23-Fe0018098	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Xylenes - Total*	M23-Fe0018098	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M23-Fe0018098	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	M23-Fe0025652	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M23-Fe0025652	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
4.4'-DDD	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
4.4'-DDE	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
4.4'-DDT	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
a-HCH	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Aldrin	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
b-HCH	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
d-HCH	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Dieldrin	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan I	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan II	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan sulphate	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin aldehyde	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin ketone	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
g-HCH (Lindane)	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Heptachlor	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Heptachlor epoxide	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Hexachlorobenzene	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Methoxychlor	M23-Fe0025652	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Toxaphene	M23-Fe0025652	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	M23-Fe0025652	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1221	M23-Fe0025652	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1232	M23-Fe0025652	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1242	M23-Fe0025652	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1248	M23-Fe0025652	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1254	M23-Fe0025652	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1260	M23-Fe0025652	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Total PCB*	M23-Fe0025652	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	M23-Fe0025652	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,4-Dichlorophenol	M23-Fe0025652	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,4,5-Trichlorophenol	M23-Fe0025652	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,4,6-Trichlorophenol	M23-Fe0025652	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,6-Dichlorophenol	M23-Fe0025652	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
4-Chloro-3-methylphenol	M23-Fe0025652	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Pentachlorophenol	M23-Fe0025652	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Tetrachlorophenols - Total	M23-Fe0025652	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	M23-Fe0025652	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	M23-Fe0025652	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass
2-Nitrophenol	M23-Fe0025652	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,4-Dimethylphenol	M23-Fe0025652	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,4-Dinitrophenol	M23-Fe0025652	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass
2-Methylphenol (o-Cresol)	M23-Fe0025652	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	M23-Fe0025652	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass
4-Nitrophenol	M23-Fe0025652	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass
Dinoseb	M23-Fe0025652	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
Phenol	M23-Fe0025652	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chloride	M23-Fe0020471	NCP	mg/L	2600	2600	2.0	30%	Pass
Chromium (hexavalent)	M23-Fe0018104	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Conductivity (at 25 °C)	M23-Fe0016949	NCP	uS/cm	7600	7600	<1	30%	Pass
Fluoride	M23-Fe0018104	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass
Nitrate & Nitrite (as N)	M23-Fe0016947	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
				Result 1	Result 2	RPD		
pH (at 25 °C)	M23-Fe0016949	NCP	pH Units	9.0	9.1	pass	30%	Pass
Phosphate total (as P)	M23-Fe0027013	NCP	mg/L	0.18	0.20	9.6	30%	Pass
Sulphate (as SO ₄)	M23-Fe0020471	NCP	mg/L	4300	4300	<1	30%	Pass
Total Kjeldahl Nitrogen (as N)	M23-Fe0016953	NCP	mg/L	60	42	35	30%	Fail
Q15								
Duplicate								
Heavy Metals								
				Result 1	Result 2	RPD		
Arsenic	M23-Fe0017373	NCP	mg/L	0.001	0.001	<1	30%	Pass
Arsenic (filtered)	M23-Fe0023073	NCP	mg/L	0.002	0.001	5.8	30%	Pass
Beryllium	M23-Fe0018104	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Boron	M23-Fe0018104	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass
Cadmium	M23-Fe0017373	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Cadmium (filtered)	M23-Fe0023073	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	M23-Fe0017373	NCP	mg/L	0.002	0.001	13	30%	Pass
Chromium (filtered)	M23-Fe0023073	NCP	mg/L	0.004	0.004	3.3	30%	Pass
Cobalt	M23-Fe0018104	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	M23-Fe0017373	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	M23-Fe0023073	NCP	mg/L	0.002	0.002	<1	30%	Pass
Lead	M23-Fe0017373	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead (filtered)	M23-Fe0023073	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese	M23-Fe0018104	CP	mg/L	0.006	0.005	11	30%	Pass
Mercury	M23-Fe0017373	NCP	mg/L	0.0005	0.0005	2.5	30%	Pass
Mercury (filtered)	M23-Fe0023073	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Molybdenum (filtered)	M23-Fe0023073	NCP	mg/L	0.007	0.007	2.2	30%	Pass
Nickel	M23-Fe0017373	NCP	mg/L	0.047	0.047	<1	30%	Pass
Nickel (filtered)	M23-Fe0023073	NCP	mg/L	0.002	0.002	1.6	30%	Pass
Selenium	M23-Fe0017373	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Selenium (filtered)	M23-Fe0023073	NCP	mg/L	0.003	0.004	6.9	30%	Pass
Silver (filtered)	M23-Fe0023073	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Tin (filtered)	M23-Fe0023073	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Zinc	M23-Fe0017373	NCP	mg/L	0.020	0.020	1.4	30%	Pass
Zinc (filtered)	M23-Fe0023073	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)								
				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	M23-Fe0013999	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanoic acid (PFNA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotridecanoic acid (PFTTrDA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass

Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	M23-Fe0013999	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Fe0013999	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Fe0013999	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Fe0013999	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Fe0013999	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Fe0013999	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Fe0013999	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSA's)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Fe0013999	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Fe0013999	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Beryllium (filtered)	M23-Fe0023073	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Boron (filtered)	M23-Fe0023073	NCP	mg/L	0.88	0.93	5.5	30%	Pass
Cobalt (filtered)	M23-Fe0023073	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese (filtered)	M23-Fe0023073	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Beryllium	M23-Fe0017373	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Boron	M23-Fe0017373	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass
Cobalt	M23-Fe0017373	NCP	mg/L	0.013	0.013	<1	30%	Pass
Manganese	M23-Fe0017373	NCP	mg/L	1.6	1.6	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Catherine Wilson	Analytical Services Manager
Joseph Edouard	Senior Analyst-Organic
Joseph Edouard	Senior Analyst-PFAS
Joseph Edouard	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Metal
Scott Beddoes	Senior Analyst-Inorganic



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ____ of ____


TETRA TECH
 COFFEY

Consigning Office: Southbank

Report Results to: Roger Gibbs

Mobile: +61 418 614 610

Email: roger.gibbs@tetrattech.comInvoices to: [RG](#)

Phone: +61 3 9290 7000

Email:

Project No: 754-MELGE309933

Task No:

Project Name: Heidelberg Road Development Laboratory:

Sampler's Name: AS

Project Manager: RG

Quote number (if different to current quoted prices):

Special Instructions: ***SEND QC2 TO ALS***

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	B19A PFAS/PCOA/6:2FTS 8:2FTS	R1 MISA (MISA)	TRAH/BTEXN	Aggressive Suite	NOTES
	B9 0155 I	08/02	13:35	W	2V, 2A, 4P, 1PFAS	STND	X	X	X	X	
	QC1	I	14:00	I	2V, 1A, 1P, 1PFAS	2					
*	QC2	I	14:00	I	2V, 1A, 1P, 1PFAS			X			FORWARD TO ALS *
	QC3	I	14:30	I	2V, 1A			X			
	QC4	I	10:20	I	2V				X		

DATE: 8/2/23
 TIME: 5:40 PM
 COURIER: 11.2 + 1.3 R.3
 TEMPERATURE: YES
 ATTEMPT TO CHILL: YES
 Emily D

RELINQUISHED BY

 Name: Adi Saxeem Date: 08/02
 Coffey Time: 15:48

 Name: _____ Date: _____
 Company: _____ Time: _____

RECEIVED BY

 Name: [Signature] Date: _____
 Company: NOVA Time: _____

 Name: _____ Date: _____
 Company: _____ Time: _____

Sample Receipt Advice: (Lab Use Only)

All Samples Received in Good Condition ☐All Documentation is in Proper Order ☐Samples Received Properly Chilled ☐Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

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Work Order	: EM2302189	Page	: 1 of 2
Client	: TETRA TECH COFFEY PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR ROGER GIBBS	Contact	: Graeme Jablonskas
Address	: Level 11/2 Riverside Quay Southbank 3006	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9609
Project	: 754-MELGE309933	Date Samples Received	: 09-Feb-2023 11:40
Order number	: ----	Date Analysis Commenced	: 15-Feb-2023
C-O-C number	: ----	Issue Date	: 16-Feb-2023 14:11
Sampler	: AG		
Site	:		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

This Certificate of Analysis contains the following information:

- Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 ^ = This result is computed from individual analyte detections at or above the level of reporting
 ø = ALS is not NATA accredited for these tests.
 ~ = Indicates an estimated value.

Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Sample ID

				QC2	----	----	----	----
Sampling date / time				08-Feb-2023 14:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2302189-001	-----	-----	-----	-----
Result				Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	0.004	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	0.007	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.012	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.182	----	----	----	----
Boron	7440-42-8	0.05	mg/L	<0.05	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----

QUALITY CONTROL REPORT

Work Order	: EM2302189	Page	: 1 of 5
Client	: TETRA TECH COFFEY PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR ROGER GIBBS	Contact	: Graeme Jablonskas
Address	: Level 11/2 Riverside Quay Southbank 3006	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9609
Project	: 754-MELGE309933	Date Samples Received	: 09-Feb-2023
Order number	: ----	Date Analysis Commenced	: 15-Feb-2023
C-O-C number	: ----	Issue Date	: 16-Feb-2023
Sampler	: AG		
Site	:		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4872845)									
EM2302215-022	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EM2302165-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.003	0.002	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.002	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit

Page : 3 of 5
Work Order : EM2302189
Client : TETRA TECH COFFEY PTY LTD
Project : 754-MELGE309933



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG035F: Dissolved Mercury by FIMS (QC Lot: 4872846)									
EM2302165-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit



Sub-Matrix: WATER

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035F: Dissolved Mercury by FIMS (QCLot: 4872846) - continued							
EM2302165-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	83.3	70.0	120

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2302189	Page	: 1 of 4
Client	: TETRA TECH COFFEY PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MR ROGER GIBBS	Telephone	: +6138549 9609
Project	: 754-MELGE309933	Date Samples Received	: 09-Feb-2023
Site	:	Issue Date	: 16-Feb-2023
Sampler	: AG	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QC2	08-Feb-2023	----	----	----	15-Feb-2023	07-Aug-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QC2	08-Feb-2023	----	----	----	16-Feb-2023	08-Mar-2023	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	13	15.38	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Page 1 of 1



Consigning Office: Melbourne

Report Results to: Roger Gibbs, Gilberto Ponce Rios Mobile:

Invoices to: berto.poncerios@tetrattech.com; ETS.S

Phone: 9290 7000

Email:

Email:

Project No: 754-MELGE309933

Task No:

LabSync Details

EsDat Project ID:

754-MELGE309933

ETS.SVC.COF Esdat@tetrattech.com

eSRN

Project Name: Ivanhoe

Laboratory: ALS

Sampler's Name: BZ

Project Manager: Roger Gibbs

Quote number (if different to current quoted prices):

Special Instructions:

Analysis Request Section

Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	BTEX	TRH	PAHs	M13A	NOTES									
1	qc02	6/02/2023		S	Jar	STD	X	X	X	X										
<p>relinquished by: Emily D 15/02/23 8:00am</p>																				

Environmental Division
Melbourne
Work Order Reference
EM2302514



Telephone : + 61-3-8549 9800

RELINQUISHED BY

RECEIVED BY

Sample Receipt Advice: (Lab Use Only)

All Samples Received in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

C/Note:

Temp: 16 °C Seal: Y
Ice / Icebricks / NA



APPENDIX H GROUNDWATER SAMPLING LOGS



TETRA TECH
COFFEY

*well # pump started @ 12:44, 200, 40V @ 35 PSI
first flows at 12:51
B 400, 80V @ 35 PSI at 13:06.*

$$3E_{\text{val}} \rightarrow 3 \times [350 + (80 \times 13)] \approx 4.1$$

$$\approx 4.2$$

Groundwater Sampling Form (B) – Micro Purge

PROJECT NAME:	Heidelberg Road Development	PROJECT NUMBER:	754-MELGE309933
FIELD PERSONNEL:	AS	DATE:	08/02
PROJECT MANAGER:	RG	PAGE	1 of 1

WELL ID: B901551I **DIAMETER:** 50 mm **WELL DEPTH:** 14.587 m **SCREEN INTERVAL:** _____ to _____ m below TOC **STICK-UP:** -40 mm

FIELD EQUIPMENT IDENTITIES IP Serial number: MIM-8351 WQM Serial Number: MWQ-3531 PID Serial number: _____	FIELD EQUIPMENT INSTALLATION DETAILS Depth to Water - Before Pump Installation: 9.074 m below TOC After Pump Installation: 8.921 m below TOC Pump Intake Depth: 12.0 m Equipment Volume: 1.3 L ORP Ref Electrode: (circle) SHE / Calomel Saturated KCl / Ag/AgCl 1M KCl / Ag/AgCl 4M KCl / Ag/AgCl Saturated KCl	WELL HEADSPACE PID READING PID READING PPM: _____
----------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------

TIME OF DAY	CYCLE/ PUMP RATE (ml/min)	VOLUME (L) note 1	DEPTH TO WATER (m) note 2	DISSOLVED OXYGEN (mg/l)		ELECTRICAL CONDUCTIVITY (mS or µS/cm)		pH (pH units)		REDOX POTENTIAL (mV)		TEMPERATURE (°C)		CLARITY – tick one					COMMENTS ODOUR, COLOUR, SEDIMENTS, PSH COLLECTED, etc
				READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE*	READING	CHANGE	Clear	Slightly Cloudy	Cloudy	Very Cloudy	Turbid	
12:55	100	0.5	9.291	39.6		328.9		6.44		132.7		17.9		✓					slight pale yellow
13:00	100	1.0	9.494	40.6		330.3		6.38		130.9		17.8		✓					"
13:05	100	1.5	9.745	39.1		332.7		6.39		124.9		17.9		✓					"
13:10	50	1.75	9.946	38.3		333.2		6.42		123.2		18.2		✓					"
13:15	50	2.0	10.098	35.2		333.9		6.44		122.0		18.2		✓					"
✓ 13:20	50	2.25	10.198	34.1		335.4		6.48		120.4		18.2		✓					"
✓ 13:25	50	2.50	10.306	33.6		335.7		6.50		119.0		18.2		✓					"
✓ 13:30	50	2.75	10.456	34.7		335.6		6.50		118.0		18.4		✓					"
STABILISATION CRITERIA (3 readings within following ranges)				± 10%		± 3%		± 0.1 unit		± 10mV		± 0.2°C		— Sampled at 13:35					

DUPLICATE COLLECTED:

Y ☒ N ☐

DUPLICATE ID: Q21

TRIPLICATE COLLECTED:

Y ☒ N ☐

TRIPLICATE ID: Q22

WERE METALS FIELD FILTERED?

Y ☒ N ☐ NA ☐

Unfiltered samples must not be put into a preserved container (i.e. 'metals' bottle)

HAS THIS FORM BEEN COMPLETED IN FULL?

Y ☒ N ☐

Groundwater Sampling Form (B) – Micro Purge

Issue Date: 26/08/2022

UNCONTROLLED WHEN PRINTED – SEE ELECTRONIC COPY FOR LATEST VERSION

Notes:

- 1 Ensure minimum 3 'equipment' volumes including volume of pump bladder, flow cell and tubing
- 2 Drawdown during pumping to be limited to <100 mm where possible

APPENDIX I DATA QUALITY REVIEW

1. QUALITY CONTROL

1.1 INTRODUCTION

The steps in the sampling and analysis process are subject to natural and inherent variability, and this can affect the results produced, and the overall quality of the data sets generated. In order to minimise the effect of this, standard procedures are used for works carried out in the field, and in the laboratory. The use of such procedures represents one aspect of the quality assurance process. To measure the effectiveness of the quality assurance process, quality control samples can be tested, and other quality control tests can be conducted during the analysis of samples taken in the field.

Quality control (QC) samples and tests can be used to assess both the accuracy and the precision of the results produced.

Measures of ACCURACY provide information on how close to the true result is the reported result. For practical reasons, measures of accuracy are usually confined to the laboratory steps in the overall process.

Measures of PRECISION provide information on the variability in the results. Precision can be assessed as:

- “repeatability” or intra-laboratory variation – the degree of variation in a result when the same laboratory analyses a sample (or blind replicate) several times, and;
- “reproducibility” or inter-laboratory variation – the degree of variation in a result when a different laboratory separately analyses a sample.

In addition, blank samples can be used to assess whether extraneous materials and factors have contributed to the results obtained from the sampling and analysis process.

QC testing can be conducted covering all steps of the process (referred to as Field QC in this report), or just one portion of the process, such as the laboratory steps (referred to as Laboratory QC in this report).

Field Quality Control

Precision of the sample collection, transport and analysis process is measured by the relative percent difference (RPD) between duplicate results. Acceptance targets for laboratory duplicates are dependent on matrix type, contaminant type and contaminant concentrations. Australian Standard AS 4482.1 – 2005 (Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds) provides the following guidance on the acceptable limits of precision for soil samples.

Typical relative percent difference is 30% – 50% of mean concentration of analyte. This variation can be expected to be higher for organic analysis than for inorganics, and for low concentration of analytes.

Noting this guidance, Tetra Tech Coffey Environments has adopted the following acceptance criteria for RPD results on replicate samples for soil (metals, metalloids and organics):

- 30% for concentrations more than 10 times the laboratory limit of reporting (LOR), and;
- 50% for concentrations less than 10 times the LOR.

For groundwater samples, the acceptance targets for a range of contaminants are listed in Table A. These have been based on acceptable RPD limits for laboratory replicate analysis (American Public Health

Association (APHA), 1992). Because groundwater is a homogenous medium, sample heterogeneity (which is a potential major contributor to variability in soil samples) would not be expected to play a part in the variability in the sampling and analysis of groundwaters. Hence, the use of laboratory-based acceptance targets can be supported.

Table A – RPD Acceptance Targets for Contaminant / Analyte Classes in Groundwater Samples

Contaminant/analyte classes	Acceptable RPD for concentrations more than 20 times the LOR	Acceptable RPD for concentrations less than 20 times the LOR
Volatile and semi-volatile organic compounds (including petroleum hydrocarbons), phenols, organochlorine pesticides, organophosphorus pesticides and herbicides	20%	40%
Metals and other inorganics	10%	25%

For blanks, Tetra Tech Coffey's approach is that the concentration of any contaminant should be less than the LOR in all blank samples.

1.2 LABORATORY QUALITY CONTROL

Laboratories are accredited by the National Association of Testing Authorities, Australia (NATA) on the basis of their ability to provide quantitative evidence of their ability and competence to produce reliable results against recognised benchmarks. NATA accredited laboratories are able to demonstrate the ability to produce reliable, repeatable results for a range of parameters within a range of sample matrices. Each laboratory method used undergoes a validation process before it is adopted by the laboratory and accredited by NATA. As part of the validation process, the precision and accuracy of the method are established.

In addition, laboratories conduct their own quality control testing to indicate their performance on each reported batch of samples. The results of this testing are compared with the validated precision and accuracy.

Precision of results is measured by the Relative Percent Difference (RPD) between replicate samples selected within the laboratory. RPD is calculated in the same way as described above for Field QC.

Accuracy of results is assessed in a number of ways:

- **Reference materials**, with known concentrations of analytes are analysed with the batch of samples. The results of this analysis are compared with the established concentrations in the reference material.
- **Spike additions**. Known amounts of targeted analytes are added to the samples to be analysed, and the spiked samples are processed through the analytical process. The amount of spiked material is measured as the recovery of the added amount reported in the final result.
- **Surrogate spikes**. Known amounts of chemical compounds with similar properties to the targeted analytes are added to the samples to be analysed, and the spiked samples are processed through the analytical process. The amount of spiked material is measured as the recovery of the added amount reported in the final result.

Schedule B(3) of the National Environment Protection Measure (NEPM) for contaminated sites states that, in general, at least 70% recovery should be achievable from a reference method. Additionally, standard methods prepared by international agencies such as the US EPA and APHA, frequently have performance data such

as expected spike recovery incorporated within the method. Where these vary from the 70% figure indicated in the NEPM Schedule, they are noted in the discussion of results which follows this introduction.

Based on the above, Tetra Tech Coffey has adopted 70% - 130% as the default acceptable range for spike recovery and surrogates spike recovery results, and as the default acceptance limits for the difference between analysis results and the expected result for reference materials.

2. FIELD SAMPLING QC PROGRAMME

2.1 PRECISION / ACCURACY

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Did the laboratory perform the requested tests?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Were the laboratory methods adopted NATA endorsed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Were the appropriate test procedures followed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Were the reporting limits satisfactory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Was the NATA Seal on the reports?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Were the reports signed by an authorised person?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments

Nil.

Precision/Accuracy of the Laboratory Report	<input checked="" type="checkbox"/> Satisfactory	<input type="checkbox"/> Unsatisfactory
	<input type="checkbox"/> Partially Satisfactory	

2.2 SAMPLE HANDLING

	Yes	No (Comment below)
1. Were the sample holding times met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Were the samples in proper custody between the field and reaching the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Were the samples properly and adequately preserved? <i>This includes keeping the samples chilled, where applicable.</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Were the samples received by the laboratory in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments

Holding times exceedances exist for vinyl chloride and styrene for soil sample batch 963822.

Sample Handling was:	<input checked="" type="checkbox"/> Satisfactory	<input type="checkbox"/> Unsatisfactory
	<input type="checkbox"/> Partially Satisfactory	

3. FIELD QA/QC

3.1 FIELD QA/QC SUMMARY

This sampling event occurred over a period of 3 days (7/02/2023 – 9/02/2023) and a total of 32 samples including primary and QA/AC samples, as summarised in the table below.

Sample Type		Number of Samples
Primary Samples		19 soil and 1 water
QA/QC Samples	Equipment Rinsates (at least 1/day/matrix/equipment)	4
	Other (Field Blanks)	
	Trip Blanks (at least 1/day or sampling event)	2
	Field Duplicates (at least 1 in 20 samples)	1 interlab and 1 intralab each for soil and water matrix.

3.2 FIELD DUPLICATES

	Yes	No (Comment below)
A. Were an <u>Adequate Number</u> of field duplicates analysed for each chemical (min. 10%)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Were RPDs within Control Limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

A RPD exceedance was identified between the primary sample and field Duplicate soil sample for moisture content. As all contaminant of potential concern concentrations were within the acceptable limits this RPD exceedance is not expected to impact the overall acceptability of the results.

3.3 TRIP BLANKS

	Yes	No (Comment below)
A. Were an <u>Adequate Number</u> of trip blanks collected?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Were the Trip Blanks free of contaminants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)		

Comments

Nil.

3.4 EQUIPMENT RINSATES

	Yes	No (Comment below)
A. Were an adequate number of Equipment Rinsates collected?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. Were the Equipment Rinsates free of contaminants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)		

Comments

A single arsenic results above the limit of reporting was noted in QC03 for rinsate collected from the hand auger This minor exceedance is unlikely impact the overall soil assessment given the low absolute concentration reported and the overall soil arsenic data base.

Field QA/QC was:	<input checked="" type="checkbox"/> Satisfactory	<input type="checkbox"/> Unsatisfactory
	<input type="checkbox"/> Partially Satisfactory	

4. LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

4.1 LABORATORY QUALITY CONTROL PROCEDURES

As noted in Section 1.3, laboratories conduct their own quality control testing to indicate their performance on each reported batch of samples. The following section assesses the adequacy of these procedures.

	Yes	No (Comment below)
1. Were the laboratory blanks/reagents blanks free of contamination?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Were the spike recoveries within control limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Were the RPDs of the laboratory duplicates within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Were the surrogate recoveries within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments

TPH fraction C15-C38 was marginally above the upper control limit for matrix spike recovery for interlab duplicate sample batch EM2305214. DDD was marginally above the upper control limit for matrix spike recovery for water samples for batch 961936. Results for both C15-C28 in batch EM2305214 and DDD for batch 961936 may report concentrations greater than actual concentrations. This is not considered to impact the overall results given that neither DDD of C15-C28 were detected in these sample batches.

- | | | |
|---------------------------------------|--------------------------------------------------|-----------------------------------------|
| 5. The laboratory internal QA/QC was: | <input checked="" type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
| | <input type="checkbox"/> Partially Satisfactory | |

5. DATA USABILITY

- | | |
|---------------------------------------------------------------------------------|-------------------------------------|
| 1. Data Directly Usable | <input checked="" type="checkbox"/> |
| 2. Data Usable with the following corrections/modifications (see comment below) | <input type="checkbox"/> |
| 3. Data Not Usable. | <input type="checkbox"/> |

Comments

Nil.

QA/QC Report Prepared by _____ Stefan Voorham

QA/QC Report Reviewed by: _____ Roger Gibbs _____
(Reviewer)

Field Program	Field ID	Sample Type	Date	Primary Sample	Matrix Type	Batch Number
Soil	QC1	Duplicate	6/02/2023	BH1_0.5	Soil	
Soil	QC2	Interlab_D	6/02/2023	BH1_0.5	Soil	
Soil	QC3	Rinsate	6/02/2023		Water	M1100
Soil	QC4	Field blank	6/02/2023		Water	M1100
Soil	QC5	Trip Blank	6/02/2023		Water	M1100
Soil	QC6	Rinsate	8/02/2023		Water	M1100
Soil	QC7	Field blank	8/02/2023		Water	M1100
Soil	QC8	Trip Blank	8/02/2023		Water	M1100
Soil	QC9	Duplicate	8/02/2023	BH3_0.8	Soil	
Soil	QC10	Interlab_D	8/02/2023	BH3_0.8	Soil	
Soil	QC11	Rinsate	8/02/2023		Water	M1100
Soil	QC12	Field blank	8/02/2023		Water	M1100
Soil	QC13	Trip Blank	8/02/2023		Water	M1100
Groundwater	QC1	Duplicate	8/02/2023	B901551I		
Groundwater	QC2	Interlab_D	8/02/2023	B901551I		
Groundwater	QC3	Rinsate				M1100
Groundwater	QC4	Trip Blank				MW1103

Lab Report Number	Field ID	BH1_0.5	QC01	RPD	BH1_0.5	QC02	RPD	
	Date	06 Feb 2023	06 Feb 2023		06 Feb 2023	06 Feb 2023		
	Lab Report Number	963822	963822		963822	EM2302514		
	Sample Type	Normal	Field_D		Normal	Interlab_D		
	Matrix Type	Soil	Soil		Soil	Soil		
	Unit	EQL						
Physical Parameters								
Moisture Content (dried @ 103°C)	%	1	7.5	16	72	7.5	-	-
Metals								
Arsenic	mg/kg	2	<2	<2	0	<2	<5	0
Barium	mg/kg	10	-	-	-	-	10	-
Beryllium	mg/kg	1	-	-	-	-	<1	-
Boron	mg/kg	50	-	-	-	-	<50	-
Cadmium	mg/kg	0.4	<0.4	<0.4	0	<0.4	<1	0
Chromium (III+VI)	mg/kg	2	20	23	14	20	17	16
Cobalt	mg/kg	2	-	-	-	-	2	-
Copper	mg/kg	5	<5	<5	0	<5	<5	0
Lead	mg/kg	5	5.9	7.0	17	5.9	<5	17
Manganese	mg/kg	5	-	-	-	-	11	-
Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
Molybdenum	mg/kg	5	<5	<5	0	<5	-	-
Nickel	mg/kg	2	<5	<5	0	<5	3	0
Silver	mg/kg	2	<2	<2	0	<2	-	-
Selenium	mg/kg	2	<2	<2	0	<2	<5	0
Tin	mg/kg	10	<10	<10	0	<10	-	-
Vanadium	mg/kg	5	-	-	-	-	31	-
Zinc	mg/kg	5	<5	<5	0	<5	<5	0
NA								
Moisture Content	%	1	-	-	-	-	6.9	-
BTEX								
Benzene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.2	0
Toluene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Xylene Total	mg/kg	0.3	<0.3	<0.3	0	<0.3	<0.5	0
Naphthalene (VOC)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<1	0
Total BTEX	mg/kg	0.2	-	-	-	-	<0.2	-
Xylene (o)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Xylene (m & p)	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.5	0
Total Petroleum Hydrocarbons								
C6 - C9	mg/kg	10	<20	<20	0	<20	<10	0
C10 - C14	mg/kg	20	<20	<20	0	<20	<50	0
C15 - C28	mg/kg	50	<50	<50	0	<50	<100	0
C29 - C36	mg/kg	50	<50	<50	0	<50	<100	0
C10 - C36 (Sum of total)	mg/kg	50	<50	<50	0	<50	<50	0
Total Recoverable Hydrocarbons								
F1 (C6 - C10)	mg/kg	10	<20	<20	0	<20	<10	0
F1 (C6 - C10) less BTEX	mg/kg	10	<20	<20	0	<20	<10	0
F2 (C10 - C16)	mg/kg	50	<50	<50	0	<50	<50	0
F2 C10 - C16 (minus Naphthalene)	mg/kg	50	<50	<50	0	<50	<50	0
F3 (C16 - C34)	mg/kg	100	<100	<100	0	<100	<100	0
F4 (C34 - C40)	mg/kg	100	<100	<100	0	<100	<100	0
C10 - C40 (Sum of total)	mg/kg	50	<100	<100	0	<100	<50	0
Polycyclic Aromatic Hydrocarbons								
Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0.6	0	0.6	0.6	0
Benzo(a)pyrene TEQ (LOR)	mg/kg	0.5	1.2	1.2	0	1.2	1.2	0
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Benzo(b+j)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Benzo(a) pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Naphthalene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
PAHs (Sum of total)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 50 (1 - 10 x EQL); 30 (10 - 10 x EQL); 30 (> 10 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

		Field ID Date Lab Report Number Sample Type Matrix Type	B901551I	QC1	RPD	B901551I	QC2	RPD
			08 Feb 2023	08 Feb 2023		08 Feb 2023	08 Feb 2023	
			961936	961936		961936	EM2302189	
			Normal	Field_D		Normal	Interlab_D	
			Water	Water		Water	Water	
	Unit	EQL						
Physical Parameters								
Electrical Conductivity @ 25C (lab)	µS/cm	10	330	-	-	330	-	-
pH (lab)	pH_unit	0.1	7.9	-	-	7.9	-	-
Metals								
Arsenic (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Beryllium (filtered)	mg/L	0.001	-	<0.001	-	-	<0.001	-
Boron (filtered)	mg/L	0.05	-	<0.05	-	-	<0.05	-
Cadmium (filtered)	mg/L	0.0001	<0.0002	<0.0002	0	<0.0002	<0.0001	0
Chromium (hexavalent)	mg/L	0.005	<0.005	-	-	<0.005	-	-
Chromium (III+VI) (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	0.001	0
Cobalt (filtered)	mg/L	0.001	-	<0.001	-	-	<0.001	-
Copper (filtered)	mg/L	0.001	0.005	0.005	0	0.005	0.004	22
Lead (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0
Manganese (filtered)	mg/L	0.001	-	0.011	-	-	0.007	-
Mercury (filtered)	mg/L	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Molybdenum (filtered)	mg/L	0.005	<0.005	-	-	<0.005	-	-
Nickel (filtered)	mg/L	0.001	0.009	0.008	12	0.009	0.012	29
Silver (filtered)	mg/L	0.005	<0.005	-	-	<0.005	-	-
Selenium (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.01	0
Tin (filtered)	mg/L	0.005	<0.005	-	-	<0.005	-	-
Zinc (filtered)	mg/L	0.005	0.19	0.17	11	0.19	0.182	4
NA								
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	mg/L	0.00001	0.00003	-	-	0.00003	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	mg/L	0.00001	0.00003	-	-	0.00003	-	-
BTEX								
Benzene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Toluene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Ethylbenzene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Xylene Total	mg/L	0.003	<0.003	-	-	<0.003	-	-
Naphthalene (VOC)	mg/L	0.01	<0.01	-	-	<0.01	-	-
Xylene (o)	mg/L	0.001	<0.001	-	-	<0.001	-	-
Xylene (m & p)	mg/L	0.002	<0.002	-	-	<0.002	-	-
Total Petroleum Hydrocarbons								
C6 - C9	mg/L	0.02	<0.02	-	-	<0.02	-	-
C10 - C14	mg/L	0.05	<0.05	-	-	<0.05	-	-
C15 - C28	mg/L	0.1	<0.1	-	-	<0.1	-	-
C29 - C36	mg/L	0.1	<0.1	-	-	<0.1	-	-
C10 - C36 (Sum of total)	mg/L	0.1	<0.1	-	-	<0.1	-	-
Total Recoverable Hydrocarbons								
F1 (C6 - C10)	mg/L	0.02	<0.02	-	-	<0.02	-	-
F1 (C6 - C10) less BTEX	mg/L	0.02	<0.02	-	-	<0.02	-	-
F2 (C10 - C16)	mg/L	0.05	<0.05	-	-	<0.05	-	-
F2 C10 - C16 (minus Naphthalene)	mg/L	0.05	<0.05	-	-	<0.05	-	-
F3 (C16 - C34)	mg/L	0.1	<0.1	-	-	<0.1	-	-
F4 (C34 - C40)	mg/L	0.1	<0.1	-	-	<0.1	-	-
C10 - C40 (Sum of total)	mg/L	0.1	<0.1	-	-	<0.1	-	-
Monocyclic aromatic hydrocarbons								
1,2,4-trimethylbenzene	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,3,5-trimethylbenzene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Isopropylbenzene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Styrene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Total MAH	mg/L	0.003	<0.003	-	-	<0.003	-	-
Polycyclic Aromatic Hydrocarbons								
Benzo(b+j)fluoranthene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Acenaphthene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Acenaphthylene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Anthracene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Benzo(a)anthracene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Benzo(a) pyrene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Benzo(g,h,i)perylene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Benzo(k)fluoranthene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Chrysene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Dibenz(a,h)anthracene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Fluoranthene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Fluorene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Indeno(1,2,3-c,d)pyrene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Naphthalene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Phenanthrene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Pyrene	mg/L	0.001	<0.001	-	-	<0.001	-	-
PAHs (Sum of total)	mg/L	0.001	<0.001	-	-	<0.001	-	-
Chlorinated Hydrocarbons								
Chlorinated hydrocarbons EPAVic	mg/L	0.005	<0.005	-	-	<0.005	-	-
Other chlorinated hydrocarbons EPAVic	mg/L	0.005	<0.005	-	-	<0.005	-	-
1,1,1,2-tetrachloroethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,1,1-trichloroethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,1,2,2-tetrachloroethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,1,2-trichloroethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,1-dichloroethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,1-dichloroethene	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,2,3-trichloropropane	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,2-dichloroethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,2-dichloropropane	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,3-dichloropropane	mg/L	0.001	<0.001	-	-	<0.001	-	-
Bromochloromethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
Bromodichloromethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
Bromoform	mg/L	0.001	<0.001	-	-	<0.001	-	-
Carbon tetrachloride	mg/L	0.001	<0.001	-	-	<0.001	-	-
Chlorodibromomethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
Chloroethane	mg/L	0.005	<0.005	-	-	<0.005	-	-
Chloroform	mg/L	0.005	<0.005	-	-	<0.005	-	-

Field ID Date Lab Report Number Sample Type Matrix Type			B901551I	QC1	RPD	B901551I	QC2	RPD
			08 Feb 2023	08 Feb 2023		08 Feb 2023	08 Feb 2023	
			961936	961936		961936	EM2302189	
			Normal	Field_D		Normal	Interlab_D	
			Water	Water		Water	Water	
	Unit	EQL						
Chloromethane	mg/L	0.005	<0.005	-	-	<0.005	-	-
cis-1,2-dichloroethene	mg/L	0.001	<0.001	-	-	<0.001	-	-
cis-1,3-dichloropropene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Dibromomethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
Dichloromethane	mg/L	0.005	<0.005	-	-	<0.005	-	-
Hexachlorobutadiene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Trichloroethene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Tetrachloroethene	mg/L	0.001	<0.001	-	-	<0.001	-	-
trans-1,2-dichloroethene	mg/L	0.001	<0.001	-	-	<0.001	-	-
trans-1,3-dichloropropene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Vinyl chloride	mg/L	0.005	<0.005	-	-	<0.005	-	-
Halogenated Hydrocarbons								
1,2-dibromoethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
Bromomethane	mg/L	0.005	<0.005	-	-	<0.005	-	-
Dichlorodifluoromethane	mg/L	0.005	<0.005	-	-	<0.005	-	-
Iodomethane	mg/L	0.001	<0.001	-	-	<0.001	-	-
Trichlorofluoromethane	mg/L	0.005	<0.005	-	-	<0.005	-	-
Per and polyfluoroalkyl substances								
Sum of PFAS (WA DER List)	µg/L	0.05	<0.05	-	-	<0.05	-	-
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.01	0.03	-	-	0.03	-	-
Perfluorodecane sulfonic acid (PFDS)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.05	-	-	<0.05	-	-
Perfluoropentanoic acid (PFPeA)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluorohexanoic acid (PFHxA)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluoropropanesulfonic acid (PFPrS)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluorononanesulfonic acid (PFNS)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluorooctanoic acid (PFOA)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluorononanoic acid (PFNA)	µg/L	0.01	<0.01	-	-	<0.01	-	-
N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	µg/L	0.05	<0.05	-	-	<0.05	-	-
Perfluorodecanoic acid (PFDA)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Perfluorooctane sulfonamide (PFOSA)	µg/L	0.05	<0.05	-	-	<0.05	-	-
N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	µg/L	0.05	<0.05	-	-	<0.05	-	-
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	µg/L	0.05	<0.05	-	-	<0.05	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	µg/L	0.05	<0.05	-	-	<0.05	-	-
N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	µg/L	0.05	<0.05	-	-	<0.05	-	-
N-Methyl perfluorooctane sulfonamide (NMeFOSA)	µg/L	0.05	<0.05	-	-	<0.05	-	-
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01	<0.01	-	-	<0.01	-	-
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.05	<0.05	-	-	<0.05	-	-
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.01	<0.01	-	-	<0.01	-	-
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01	<0.01	-	-	<0.01	-	-
Sum (PFHxS + PFOS)	µg/L	0.01	0.03	-	-	0.03	-	-
Sum of PFASs (n=28)	µg/L	0.1	<0.1	-	-	<0.1	-	-
Halogenated Benzenes								
1,2,4-trichlorobenzene	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,2-dichlorobenzene	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,3-dichlorobenzene	mg/L	0.001	<0.001	-	-	<0.001	-	-
1,4-dichlorobenzene	mg/L	0.001	<0.001	-	-	<0.001	-	-
4-chlorotoluene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Bromobenzene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Chlorobenzene	mg/L	0.001	<0.001	-	-	<0.001	-	-
Hexachlorobenzene	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
PCBs								
Arochlor 1016	mg/L	0.005	<0.005	-	-	<0.005	-	-
Arochlor 1221	mg/L	0.005	<0.005	-	-	<0.005	-	-
Arochlor 1232	mg/L	0.005	<0.005	-	-	<0.005	-	-
Arochlor 1242	mg/L	0.005	<0.005	-	-	<0.005	-	-
Arochlor 1248	mg/L	0.005	<0.005	-	-	<0.005	-	-
Arochlor 1254	mg/L	0.005	<0.005	-	-	<0.005	-	-
Arochlor 1260	mg/L	0.005	<0.005	-	-	<0.005	-	-
PCBs (Sum of total)	mg/L	0.005	<0.005	-	-	<0.005	-	-

Lab Report Number	Field ID	B901551I	QC1	RPD	B901551I	QC2	RPD	
	Date	08 Feb 2023	08 Feb 2023		08 Feb 2023	08 Feb 2023		
	Sample Type	961936	961936		961936	EM2302189		
	Matrix Type	Normal	Field_D		Normal	Interlab_D		
		Water	Water		Water	Water		
	Unit	EQL						
Phenols								
3/4-Methylphenol (m/p-cresol)	mg/L	0.006	<0.006	-	-	<0.006	-	-
2,4-Dinitrophenol	mg/L	0.03	<0.03	-	-	<0.03	-	-
2,4,5-Trichlorophenol	mg/L	0.01	<0.01	-	-	<0.01	-	-
2,4,6-Trichlorophenol	mg/L	0.01	<0.01	-	-	<0.01	-	-
2,4-Dichlorophenol	mg/L	0.003	<0.003	-	-	<0.003	-	-
2,4-Dimethylphenol	mg/L	0.003	<0.003	-	-	<0.003	-	-
2,6-Dichlorophenol	mg/L	0.003	<0.003	-	-	<0.003	-	-
2-Chlorophenol	mg/L	0.003	<0.003	-	-	<0.003	-	-
2-Methylphenol	mg/L	0.003	<0.003	-	-	<0.003	-	-
2-Nitrophenol	mg/L	0.01	<0.01	-	-	<0.01	-	-
4,6-Dinitro-2-methylphenol	mg/L	0.03	<0.03	-	-	<0.03	-	-
4,6-Dinitro-o-cyclohexyl phenol	mg/L	0.1	<0.1	-	-	<0.1	-	-
4-Nitrophenol	mg/L	0.03	<0.03	-	-	<0.03	-	-
4-chloro-3-methylphenol	mg/L	0.01	<0.01	-	-	<0.01	-	-
Cresol Total	mg/L	0.01	<0.01	-	-	<0.01	-	-
Pentachlorophenol	mg/L	0.01	<0.01	-	-	<0.01	-	-
Phenol	mg/L	0.003	<0.003	-	-	<0.003	-	-
Tetrachlorophenols	mg/L	0.03	<0.03	-	-	<0.03	-	-
Phenols (Total Halogenated)	mg/L	0.01	<0.01	-	-	<0.01	-	-
Phenols (Total Non Halogenated)	mg/L	0.1	<0.1	-	-	<0.1	-	-
OCP								
Organochlorine pesticides EPAVic	mg/L	0.002	<0.002	-	-	<0.002	-	-
Other organochlorine pesticides EPAVic	mg/L	0.002	<0.002	-	-	<0.002	-	-
Herbicides								
Dinoseb	mg/L	0.1	<0.1	-	-	<0.1	-	-
Organochlorine Pesticides								
4,4-DDE	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
a-BHC	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Aldrin	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Aldrin + Dieldrin	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
b-BHC	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
chlordan	mg/L	0.002	<0.002	-	-	<0.002	-	-
d-BHC	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
DDD	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
DDT	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
DDT+DDE+DDD	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Dieldrin	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Endrin aldehyde	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Endrin ketone	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Endosulfan I	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Endosulfan II	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Endosulfan sulphate	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Endrin	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
g-BHC (Lindane)	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Heptachlor	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Heptachlor epoxide	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Methoxychlor	mg/L	0.0002	<0.0002	-	-	<0.0002	-	-
Toxaphene	mg/L	0.005	<0.005	-	-	<0.005	-	-
Solvents								
Methyl Ethyl Ketone	mg/L	0.005	<0.005	-	-	<0.005	-	-
4-Methyl-2-pentanone	mg/L	0.005	<0.005	-	-	<0.005	-	-
Acetone	mg/L	0.005	<0.005	-	-	<0.005	-	-
Allyl chloride	mg/L	0.001	<0.001	-	-	<0.001	-	-
Carbon disulfide	mg/L	0.001	<0.001	-	-	<0.001	-	-

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 200 (1 - 10 x EQL); 50 (10 - 20 x EQL); 30 (> 20 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

		Field Program Field ID Date Lab Report Number Sample Type Matrix Type	Soil						Groundwater	
			QC03	QC04	QC06	QC07	QC11	QC13	QC3	QC4
			06 Feb 2023	06 Feb 2023	08 Feb 2023	08 Feb 2023	09 Feb 2023	09 Feb 2023	08 Feb 2023	08 Feb 2023
			963822	963822	963822	963822	963822	963822	961936	961936
			Rinsate	Field_B	Rinsate	Field_B	Rinsate	Trip_B	Rinsate	Trip_B
			Water	Water	Water	Water	Water	Water	Water	Water
	Unit	EQL								
Metals										
Arsenic	mg/L	0.001	0.001	-	<0.001	-	<0.001	-	<0.001	-
Beryllium	mg/L	0.001	-	-	-	-	-	-	<0.001	-
Boron	mg/L	0.05	-	-	-	-	-	-	<0.05	-
Cadmium	mg/L	0.0002	<0.0002	-	<0.0002	-	<0.0002	-	<0.0002	-
Chromium (III+VI)	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	<0.001	-
Cobalt	mg/L	0.001	-	-	-	-	-	-	<0.001	-
Copper	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	<0.001	-
Lead	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	<0.001	-
Manganese	mg/L	0.005	-	-	-	-	-	-	<0.005	-
Mercury	mg/L	0.0001	<0.0001	-	<0.0001	-	<0.0001	-	<0.0001	-
Molybdenum	mg/L	0.005	<0.005	-	<0.005	-	<0.005	-	-	-
Nickel	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	<0.001	-
Silver	mg/L	0.005	<0.005	-	<0.005	-	<0.005	-	-	-
Selenium	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	<0.001	-
Tin	mg/L	0.005	<0.005	-	<0.005	-	<0.005	-	-	-
Zinc	mg/L	0.005	<0.005	-	<0.005	-	<0.005	-	<0.005	-
BTEX										
Benzene	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001
Toluene	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001
Ethylbenzene	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001
Xylene Total	mg/L	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	-	<0.003
Naphthalene (VOC)	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01
Xylene (o)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001
Xylene (m & p)	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.002
Total Petroleum Hydrocarbons										
C6 - C9	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02
C10 - C14	mg/L	0.05	<0.05	-	<0.05	-	<0.05	-	-	<0.05
C15 - C28	mg/L	0.1	<0.1	-	<0.1	-	<0.1	-	-	<0.1
C29 - C36	mg/L	0.1	<0.1	-	<0.1	-	<0.1	-	-	<0.1
C10 - C36 (Sum of total)	mg/L	0.1	<0.1	-	<0.1	-	<0.1	-	-	<0.1
Total Recoverable Hydrocarbons										
F1 (C6 - C10)	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02
F1 (C6 - C10) less BTEX	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02
F2 (C10 - C16)	mg/L	0.05	<0.05	-	<0.05	-	<0.05	-	-	<0.05
F2 C10 - C16 (minus Naphthalene)	mg/L	0.05	<0.05	-	<0.05	-	<0.05	-	-	<0.05
F3 (C16 - C34)	mg/L	0.1	<0.1	-	<0.1	-	<0.1	-	-	<0.1
F4 (C34 - C40)	mg/L	0.1	<0.1	-	<0.1	-	<0.1	-	-	<0.1
C10 - C40 (Sum of total)	mg/L	0.1	<0.1	-	<0.1	-	<0.1	-	-	<0.1
Polycyclic Aromatic Hydrocarbons										
Benzo(b+j)fluoranthene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Acenaphthene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Acenaphthylene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Anthracene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Benzo(a)anthracene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Benzo(a) pyrene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Benzo(g,h,i)perylene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Benzo(k)fluoranthene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Chrysene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Dibenz(a,h)anthracene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Fluoranthene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Fluorene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Naphthalene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Phenanthrene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
Pyrene	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-
PAHs (Sum of total)	mg/L	0.001	<0.001	-	<0.001	-	<0.001	-	-	-

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IMPORTANT INFORMATION ABOUT YOUR TETRA TECH COFFEY ENVIRONMENTAL REPORT

Introduction

This report has been prepared by Tetra Tech Coffey for you, as Tetra Tech Coffey's client, in accordance with our agreed purpose, scope, schedule and budget.

The report has been prepared using accepted procedures and practices of the consulting profession at the time it was prepared, and the opinions, recommendations and conclusions set out in the report are made in accordance with generally accepted principles and practices of that profession.

The report is based on information gained from environmental conditions (including assessment of some or all of soil, groundwater, vapour and surface water) and supplemented by reported data of the local area and professional experience. Assessment has been scoped with consideration to industry standards, regulations, guidelines and your specific requirements, including budget and timing. The characterisation of site conditions is an interpretation of information collected during assessment, in accordance with industry practice.

This interpretation is not a complete description of all material on or in the vicinity of the site, due to the inherent variation in spatial and temporal patterns of contaminant presence and impact in the natural environment. Tetra Tech Coffey may have also relied on data and other information provided by you and other qualified individuals in preparing this report. Tetra Tech Coffey has not verified the accuracy or completeness of such data or information except as otherwise stated in the report. For these reasons the report must be regarded as interpretative, in accordance with industry standards and practice, rather than being a definitive record.

Your report has been written for a specific purpose

Your report has been developed for a specific purpose as agreed by us and applies only to the site or area investigated. Unless otherwise stated in the report, this report cannot be applied to an adjacent site or area, nor can it be used when the nature of the specific purpose changes from that which we agreed.

For each purpose, a tailored approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible quantify, risks that both recognised and potential contamination pose in the context of the agreed purpose. Such risks may be financial (for example, clean up costs or constraints on site use) and/or physical (for example, potential health risks to users of the site or the general public).

Limitations of the Report

The work was conducted, and the report has been prepared, in response to an agreed purpose and scope, within time and budgetary constraints, and in reliance on certain data and information made available to Tetra Tech Coffey.

The analyses, evaluations, opinions and conclusions presented in this report are based on that purpose and scope, requirements, data or information, and they could change if such requirements or data are inaccurate or incomplete.

This report is valid as of the date of preparation. The condition of the site (including subsurface conditions) and extent or nature of contamination or other environmental hazards can change over time, as a result of either natural processes or human influence. Tetra Tech Coffey should be kept apprised of any such events and should be consulted for further investigations if any changes are noted, particularly during construction activities where excavations often reveal subsurface conditions.

In addition, advancements in professional practice regarding contaminated land and changes in applicable statutes and/or guidelines may affect the validity of this report. Consequently, the currency of conclusions and recommendations in this report should be verified if you propose to use this report more than 6 months after its date of issue.

The report does not include the evaluation or assessment of potential geotechnical engineering constraints of the site.

Interpretation of factual data

Environmental site assessments identify actual conditions only at those points where samples are taken and on the date collected. Data derived from indirect field measurements, and sometimes other reports on the site, are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions.

Variations in soil and groundwater conditions may occur between test or sample locations and actual conditions may differ from those inferred to exist. No environmental assessment program, no matter how comprehensive, can reveal all subsurface details and anomalies. Similarly, no professional, no matter how well qualified, can reveal what is hidden by earth, rock or changed through time.

The actual interface between different materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions.

For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of a suitably qualified and experienced environmental consultant through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other unrecognised features encountered on site. Tetra Tech Coffey would be pleased to assist with any investigation or advice in such circumstances.

Recommendations in this report

This report assumes, in accordance with industry practice, that the site conditions recognised through discrete sampling are representative of actual conditions throughout the investigation area. Recommendations are based on the resulting interpretation.

Should further data be obtained that differs from the data on which the report recommendations are based (such as through excavation or other additional assessment), then the recommendations would need to be reviewed and may need to be revised.

Report for benefit of client

Unless otherwise agreed between us, the report has been prepared for your benefit and no other party. Other parties should not rely upon the report or the accuracy or completeness of any recommendation and should make their own enquiries and obtain independent advice in relation to such matters.

Tetra Tech Coffey assumes no responsibility and will not be liable to any other person or organisation for, or in relation to, any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report.

To avoid misuse of the information presented in your report, we recommend that Tetra Tech Coffey be consulted before the report is provided to another party who may not be familiar with the background and the purpose of the report. In particular, an environmental disclosure report for a property vendor may not be suitable for satisfying the needs of that property's purchaser. This report should not be applied for any purpose other than that stated in the report.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, a suitably qualified and experienced environmental consultant should be retained to explain the implications of the report to other professionals referring to the report and then review plans and specifications produced to see how other professionals have incorporated the report findings.

Given Tetra Tech Coffey prepared the report and has familiarity with the site, Tetra Tech Coffey is well placed to provide such assistance. If another party is engaged to interpret the recommendations of the report, there is a risk that the contents of the report may be misinterpreted and Tetra Tech Coffey disowns any responsibility for such misinterpretation.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists or engineers based on their interpretation of field logs, field testing and laboratory evaluation of samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

This report should be reproduced in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties.

Responsibility

Environmental reporting relies on interpretation of factual information using professional judgement and opinion and has a level of uncertainty attached to it, which is much less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. As noted earlier, the recommendations and findings set out in this report should only be regarded as interpretive and should not be taken as accurate and complete information about all environmental media at all depths and locations across the site.