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Fax

To
Company

Fax

Charge no

File no

Fax operator

Randy Weber
Manitoba Conservation

948-2420

WX05154 (1000)

From

David Bynski, P. Eng.

Pages

Date

cc

13 (inc. this page)

2 May 2001

Ms Greta Najcler,

TDL Group: 1-905-845-5551

Mr. Fred Sebastian,

TDL Group: 1-403-203-7460

New
Cdn Time
BlogSubject Proposed TDL Building @ 1655-18th Street in Brandon, MB

Randy

As discussed on 1 May 2001, AMEC intends to design a pile supported structural floor for the above referenced Site (see attached plans). The recommended design incorporates from 6 to 8 internal timber piles driven to approximately 6.1 m below grade (estimated depth). A number of piles would be driven around the perimeter and a grade beam would be constructed on top of the perimeter piles. Driven piles would require removal of only the upper 1.0 to 1.5 m of soil.

As shown on the test hole logs from the April 2001 Phase II ESA, the upper approximately 1.5 m of soil in the test holes advanced throughout the proposed building was found to be non-impacted. The test holes TH4 and TH5 were advanced in the drive-thru and parking areas and based on the good condition of the existing asphalt, no excavation is expected in these areas.

During construction, a hydrocarbon resistant liner would be installed below the floor slab. A passive ventilation system would be constructed below the liner. The liner would cover the entire building footprint and would be sealed to all internal piles and to the inside of the perimeter grade beam. All impacted soil encountered during the installation of utilities would be excavated and disposed of at an approved facility (Brandon Landfill). Any impacted water encountered during excavation activities would be pumped out and disposed of an approved facility. All workers installing utility lines would be provided with proper personal protection equipment (PPE).

The following information is attached:

- Site plan (in respect to entire property)
- Test hole logs, laboratory results and site plan from the April 2001 Phase II ESA
- Plans outlining the passive ventilation system installation in respect to the pile layout

P:\Jobs\15100's\1515X's\15154 - TDL Brandon\15154-09 fax MC found design contam.doc

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- May 7 - Spoke w Dore
Bynski - verbal ok
to proceed w design
- I will follow up w
short letter - he will
follow up w RAP.
• maintain existing VES
• future monitoring

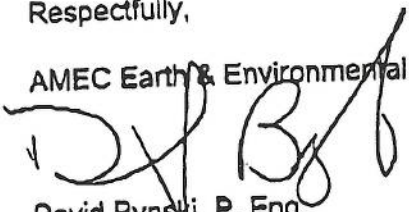
2

Please review the information provided and comment on whether a pile supported structural floor system is acceptable at the Site.

If you require more information or clarification, please do not hesitate to contact the undersigned.

Respectfully,

AMEC Earth & Environmental



David Bynski, P. Eng.
Environmental Engineer

Email: dave.bynski@amec.com

Reviewed by

Joel Wortley, P. Eng.
Geotechnical Engineer

DB/db

Cc: Ms Greta Najder, TDL Group
Mr. Fred Sebastian, TDL Group

Attachment

GEOTECHNICAL INVESTIGATION

CONTRACTOR: PADDOCK DRILLING

TEST HOLE NO: TM1

TDL GROUP

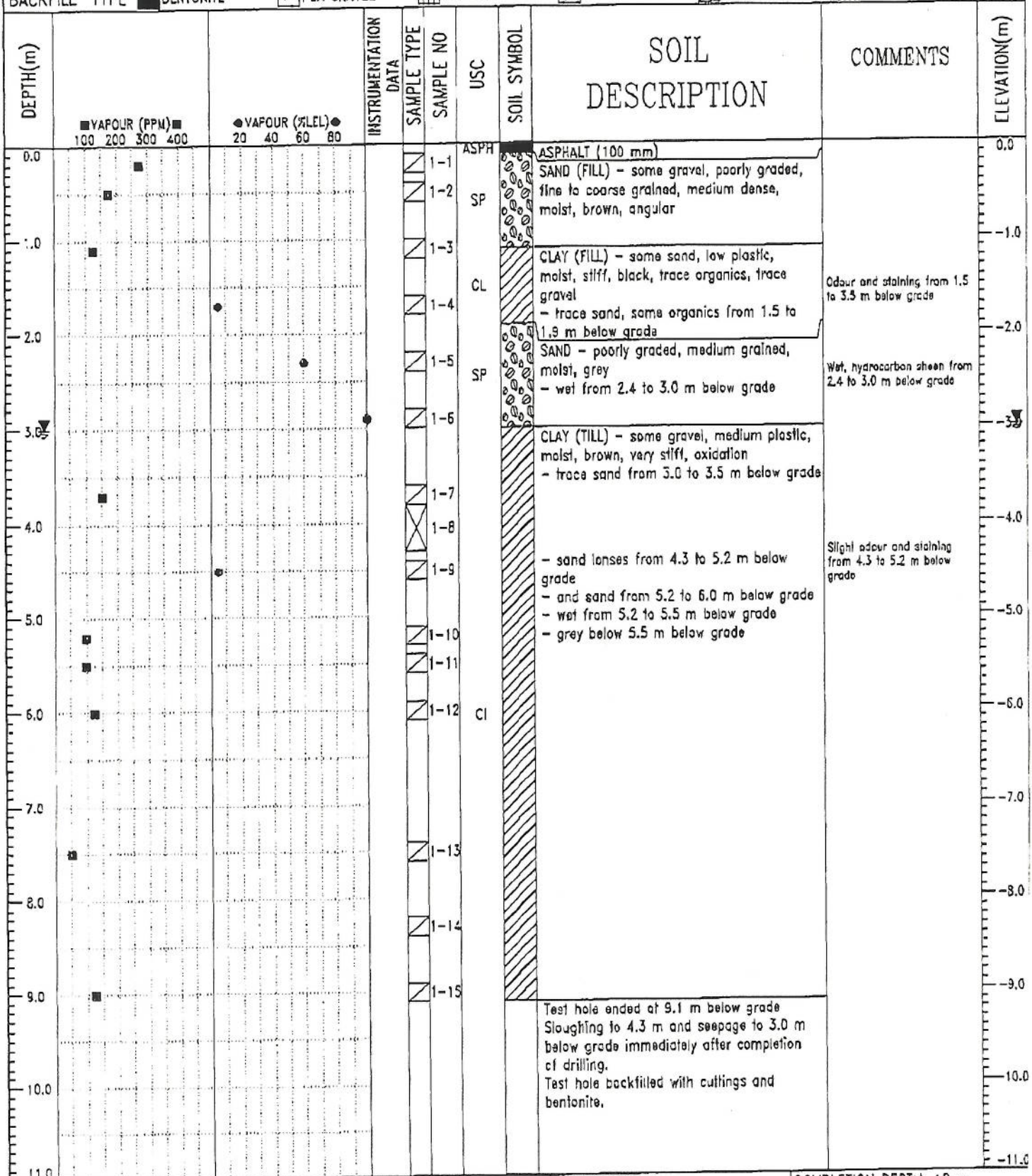
DRILL RIG: CANTERRA

PROJECT NO: WX05154

AUGER: 150 mm SOLID STEM

ELEVATION:

SAMPLE TYPE ☒ SHELBY TUBE ☒ CUTTINGS ☒ SPT ☐ CORE ☐ NO RECOVERY ☐ CONT. SAMPLE
 BACKFILL TYPE ☒ BENTONITE ☐ PEA GRAVEL ☐ SLOUGH ☐ GROUT ☐ DRILL CUTTINGS ☐ SAND



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 Winnipeg, Manitoba

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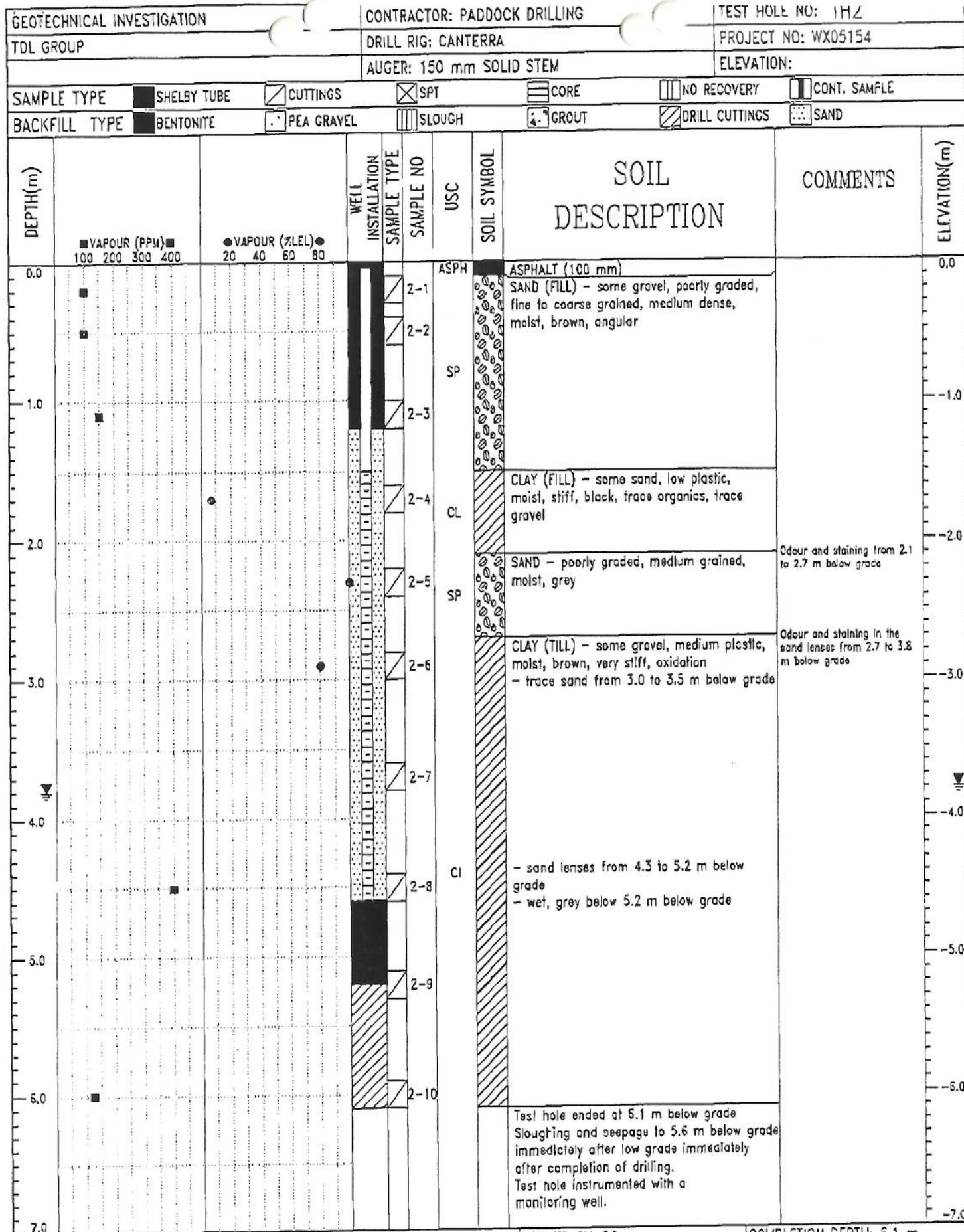
REVIEWED BY: JW

Fig. No: FIGURE 2

COMPLETION DEPTH: 10 m

COMPLETE: 04/19/01

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Fig. No: FIGURE C2

COMPLETION DEPTH: 6.1 m

COMPLETE: 04/19/01

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01/05/02 09:33AM (GEO-CNV)

GEOTECHNICAL INVESTIGATION

CONTRACTOR: PADDOCK DRILLING

TEST HOLE NO: 1M3

TDL GROUP

DRILL RIG: CANTERRA

PROJECT NO: WX05154

AUGER: 150 mm SOLID STEM

ELEVATION:

SAMPLE TYPE

SHELBY TUBE

CUTTINGS

SPT

CORE

NO RECOVERY

CONT. SAMPLE

BACKFILL TYPE

BENTONITE

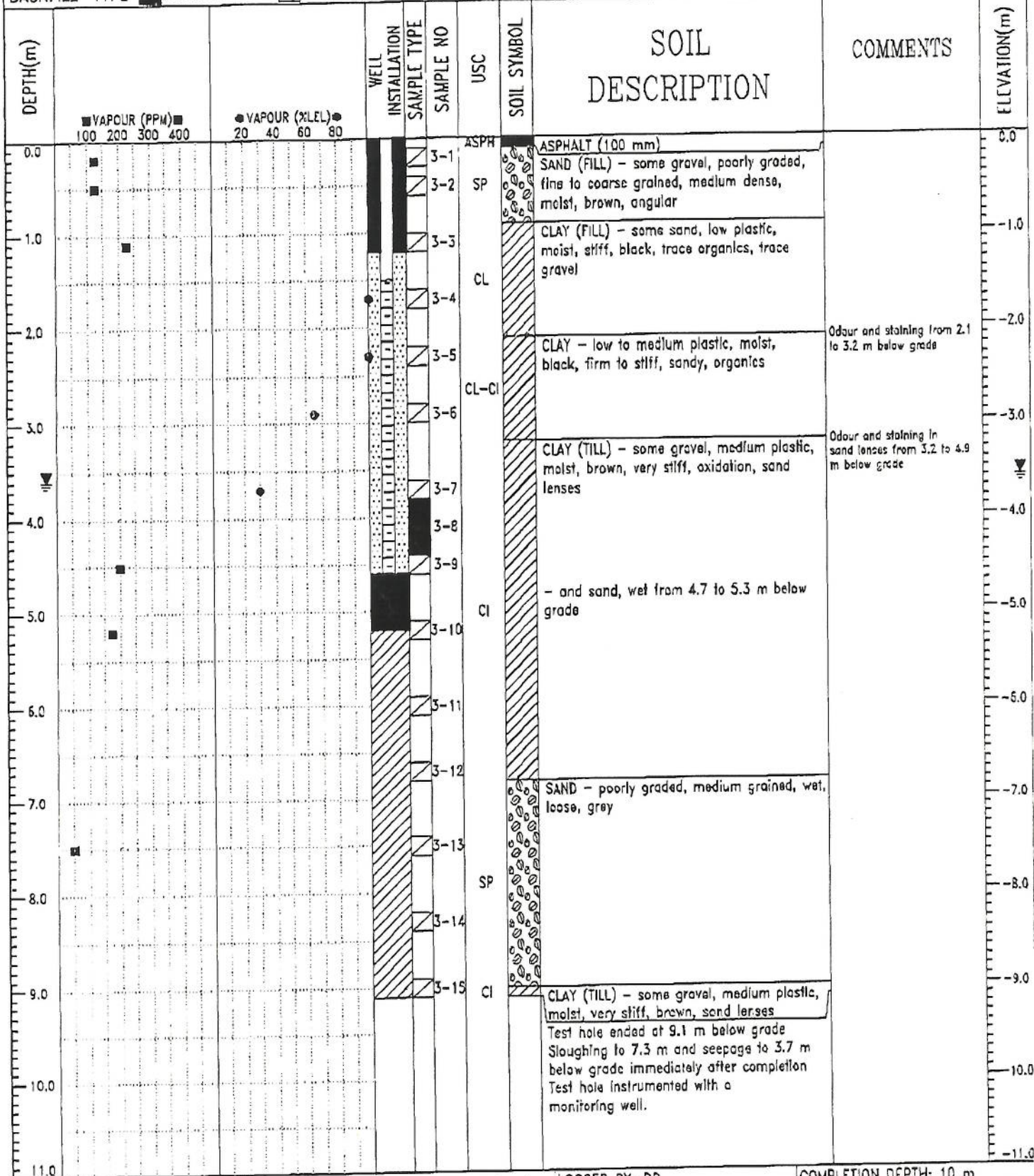
PEA GRAVEL

SLOUCH

GROUT

DRILL CUTTINGS

SAND



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LOGGED BY: DB

REVIEWED BY: JW

Fig. No: FIGURE C3

COMPLETION DEPTH: 10 m

COMPLETE: 04/19/01

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GEOTECHNICAL INVESTIGATION		CONTRACTOR: PADDOCK DRILLING		TEST HOLE NO: 1H4	
TDL GROUP		DRILL RIG: CANTERRA		PROJECT NO: WX05154	
		AUGER: 150 mm SOLID STEM		ELEVATION:	
SAMPLE TYPE		SHELBY TUBE		CUTTINGS	
BACKFILL TYPE		BENTONITE		FEA GRAVEL	
		SPT		CORE	
		NO RECOVERY		CONT. SAMPLE	
		SLOUGH		GROUT	
		DRILL CUTTINGS		SAND	

DEPTH(m)	INSTRUMENTATION DATA	SAMPLE TYPE	SAMPLE NO	USC	SOIL SYMBOL	SOIL DESCRIPTION	COMMENTS	ELEVATION(m)
0.0	■ VAPOUR (PPM) ■ 100 200 300 400	● VAPOUR (%LEL) ● 20 40 60 80				ASPH (100 mm)		0.0
0.0			4-1			SAND (FILL) - some gravel, poorly graded, fine to coarse grained, medium dense, moist, brown, angular		
0.5			4-2	SP				
1.0			4-3					-1.0
1.5			4-4	CL		CLAY (FILL) - some sand, low plastic, moist, stiff, black, trace organics, trace gravel		-2.0
2.0			4-5			CLAY - and sand, low to medium plastic, wet, black, trace gravel moist, grey	Odour and liquid phase hydrocarbons from 2.1 to 2.9 m below grade to 2.7 m below grade	-2.0
2.5			4-6	CL-CI		CLAY (TILL) - some gravel, medium plastic, moist, brown, very stiff, oxidation, sand lenses		-3.0
3.0			4-7					-4.0
3.5			4-8	CI		- grey, stiff below 5.2 m below grade		-5.0
4.0			4-9					-6.0
4.5			4-10					-7.0
5.0						Test hole ended at 5.1 m below grade Sloughing and seepage to 5.8 m below grade immediately after completion of drilling. Test hole backfilled with cuttings and bentonite.		

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Fig. No: FIGURE C4

COMPLETION DEPTH: 5.1 m

COMPLETE: 04/19/01

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01/05/02 09:53AM (CEO-LAW)

GEOTECHNICAL INVESTIGATION				CONTRACTOR: PADDOCK DRILLING				TEST HOLE NO: 1H3					
TOL GROUP				DRILL RIG: CANTERRA				PROJECT NO: WX05154					
				AUGER: 150 mm SOLID STEM				ELEVATION:					
SAMPLE TYPE		☒ SHELBY TUBE		☒ CUTTINGS		☒ SPT		☐ CORE		☐ NO RECOVERY		☐ CONT. SAMPLE	
BACKFILL TYPE		☒ BENTONITE		☐ PEA GRAVEL		☐ SLOUGH		☐ GROUT		☒ DRILL CUTTINGS		☐ SAND	

DEPTH(m)	INSTRUMENTATION DATA	SAMPLE TYPE	SAMPLE NO	USC	SOIL SYMBOL	SOIL DESCRIPTION	COMMENTS	ELEVATION(m)
0.0					ASPH	ASPHALT (100 mm)		0.0
			5-1			SAND (FILL) - some gravel, poorly graded, fine to coarse grained, medium dense, moist, brown, angular		
			5-2		SP			
1.0			5-3					-1.0
			5-4		CL	CLAY (FILL) - some sand, low plastic, moist, stiff, black, trace organics, trace gravel		-2.0
2.0			5-5		CL-CI	CLAY - and sand, low to medium plastic, wet, black, trace gravel moist, grey	Odour and liquid phase hydrocarbons from 2.1 to 2.9 m below grade to 2.7 m below grade	
			5-6			CLAY (TILL) - some gravel, medium plastic, moist, brown, very stiff, oxidation, sand lenses		-3.0
3.0			5-7					-4.0
4.0			5-8		CI	- grey, stiff below 5.2 m below grade		-5.0
5.0			5-9					-6.0
6.0			5-10					-7.0
7.0						Test hole ended at 6.1 m below grade Sloughing and seepage to 5.8 m below grade immediately after completion of drilling. Test hole backfilled with cuttings and bentonite.		

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REVIEWED BY: JW

Fig. No: FIGURE C5

COMPLETION DEPTH: 6.1 m

COMPLETE: 04/19/01

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FUTURE ABERDEEN AVENUE

18th STREET

EXISTING APPROACH

PROPERTY LINE

SITE

CANADIAN TIRE
8,061 m²
(86,770 ft²)

EXTENT OF
EXISTING
DEVELOPMENT

MARSH

EXTEND LIDS
EXTEND DITCH

ENTRANCE

ENTRANCE

TENANT "C"
4,645 m²
(50,000 ft²)

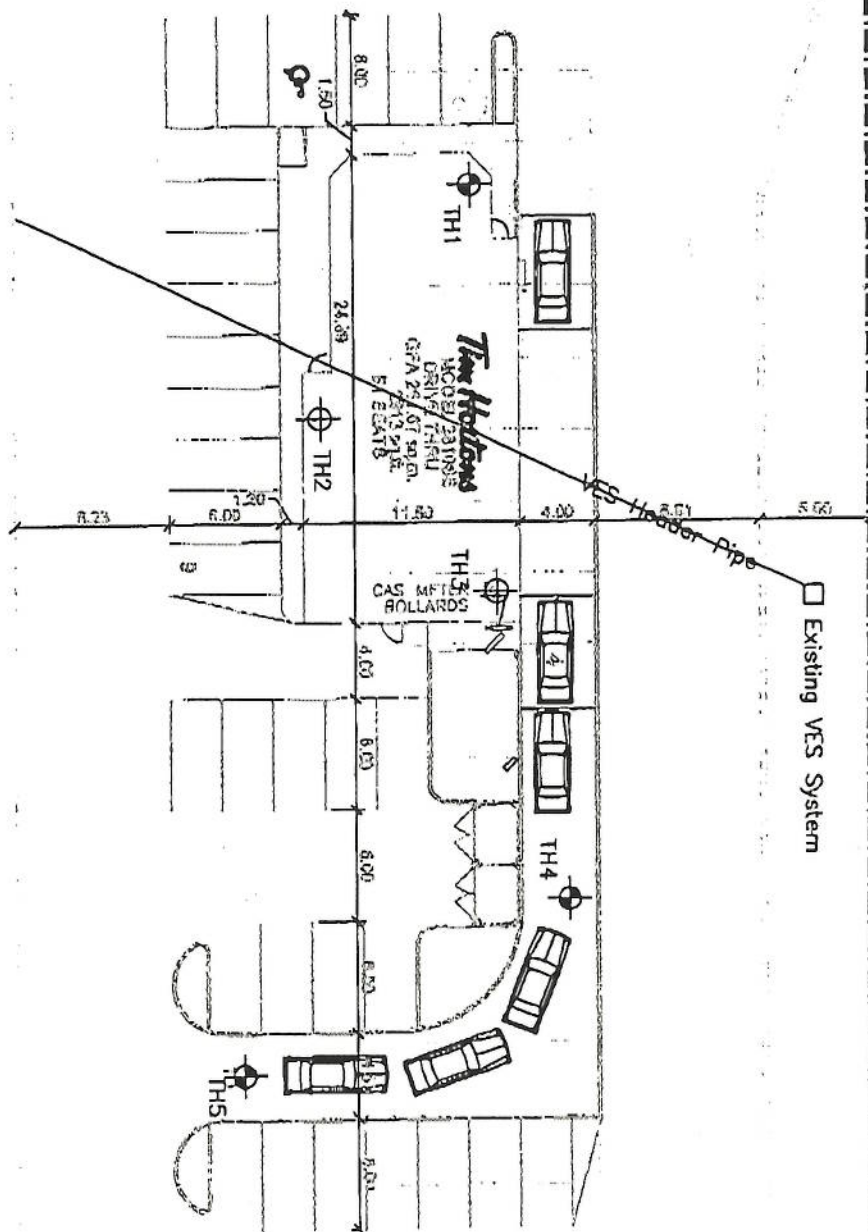
TENANT "B"
2,322 m²
(25,000 ft²)

PROPOSED 50' W/4

14th STREET

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⊕ TH1 - Testhole
⊕ TH2 - Monitoring Well



PROPOSED TOL SITE

1655 - 18th Street

BRANDON, MANITOBA

TESTHOLE LOCATION PLAN

SCALE: 1 : 400
DATE: MAY/2001
DRAWN BY: N/A
PROJECT NO.: WX-05154

FIGURE 2

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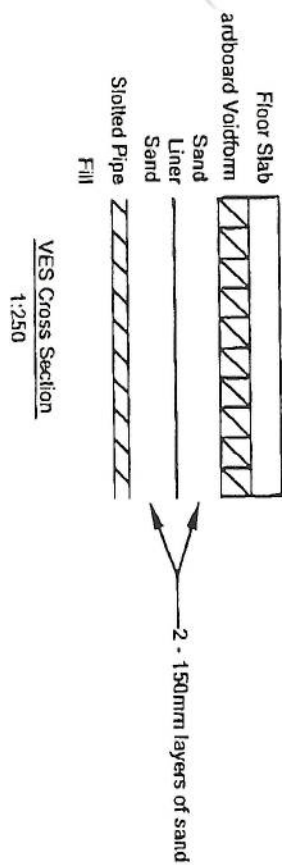
VES SYSTEM
BRANDON, MANITOBA

TDL

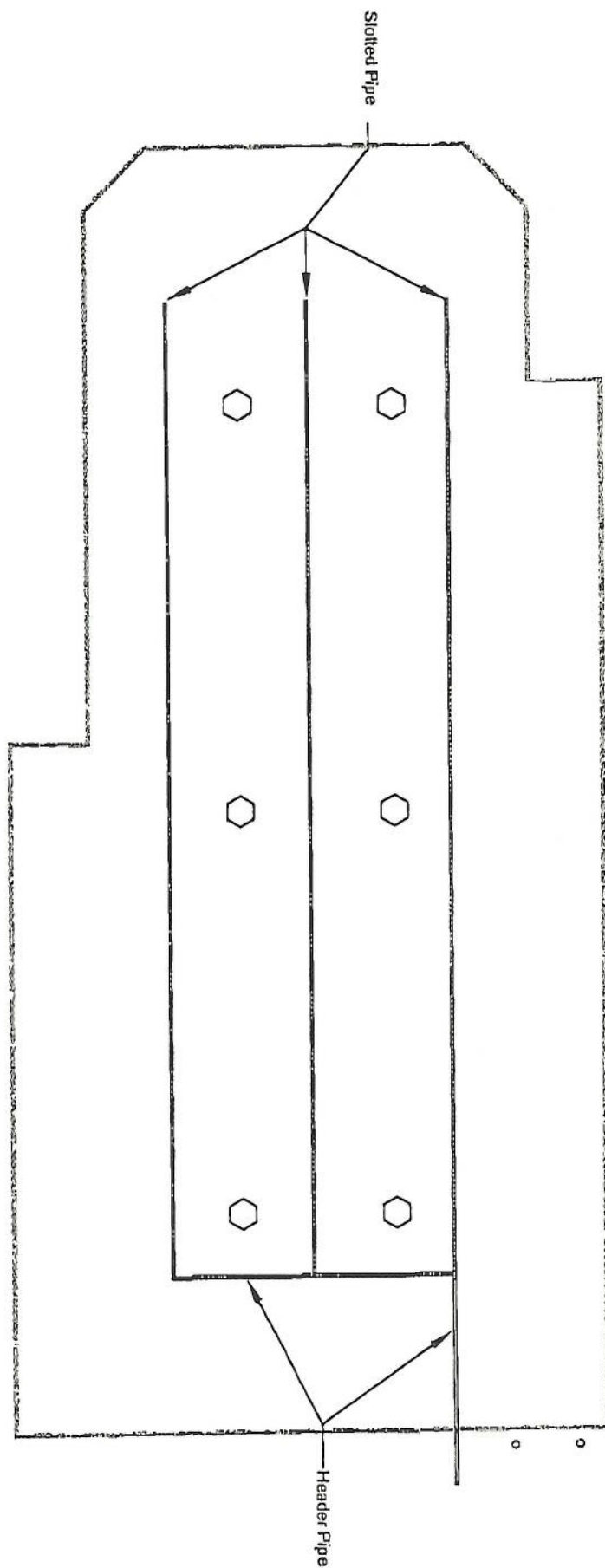
PROPOSED SIX PILE VES LAYOUT

SCALE: 1:1250 1:250
DATE: APR/2001
DRAWN BY: ORS
PROJECT NO.: WX-05154

FIGURE 1A



VES Layout
1:1250



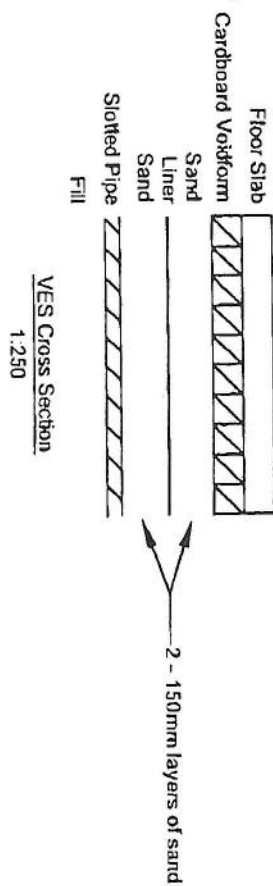
amec
EARTH & ENVIRONMENTAL LIMITED

TDL
VES SYSTEM
BRANDON, MANITOBA

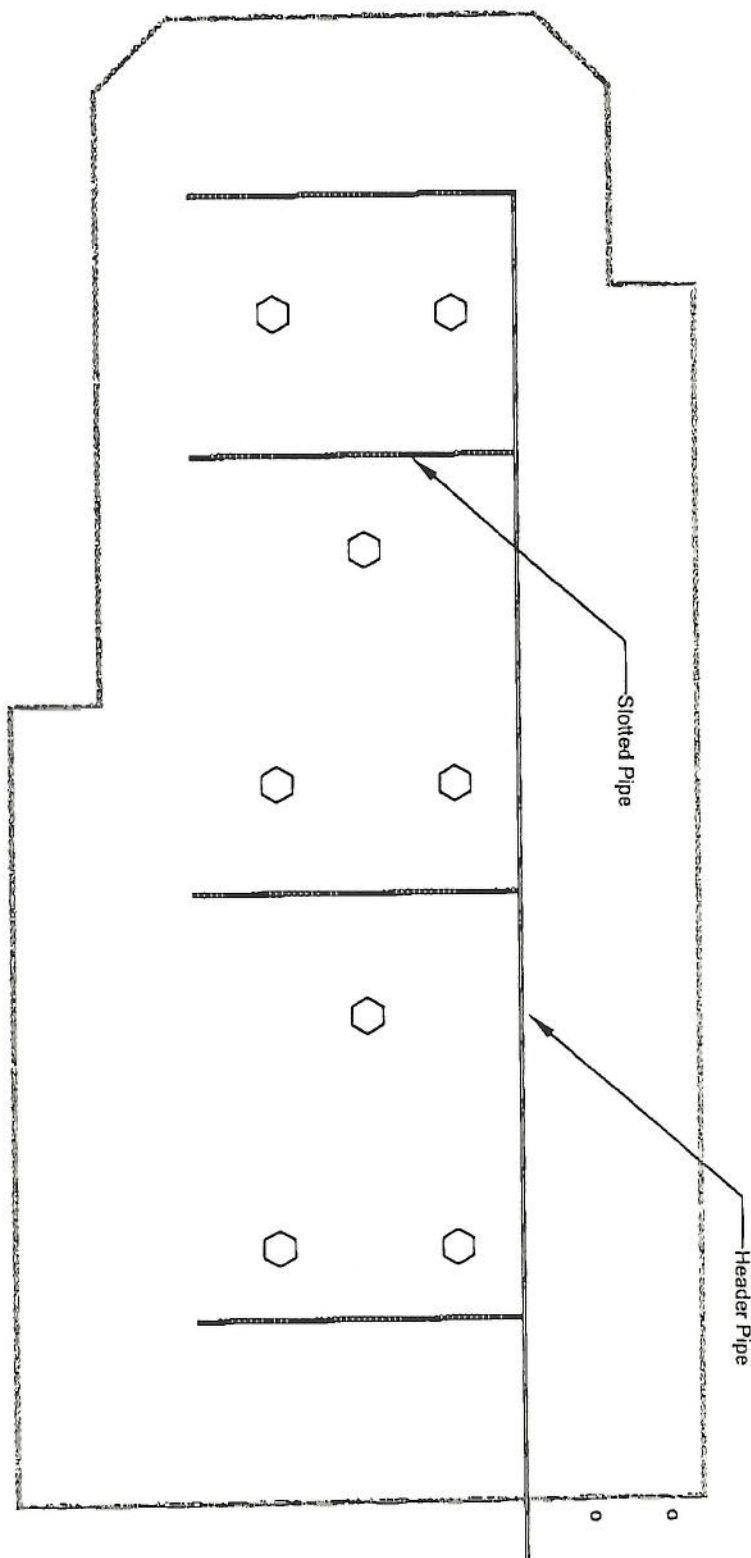
PROPOSED EIGHT PILE VES LAYOUT

SCALE: 1:1250 1:250
DATE: APR/2001
DRAWN BY: DRS
PROJECT NO.: WX-05154

FIGURE 1B



VES Layout
1:1250



**AMEC Earth & Environmental
Analytical Chemistry Laboratory**

Date Required: April 30/01

Attn: AMEC Earth & Enviro.

20

Attn: Bynski, David

Date Sampled April 19/01

Project# WX05154

FILED 41036

SOIL ANALYSIS PRELIMINARY RESULTS

ST	2001/4/23	Lab. No.	3021	3022	3023	3024
ST	2001/4/23	Sample ID.	TH1-6 @ 1.8m	TH2-5 @ 2.4m	TH1-4 @ 1.8m	TH3-5 @ 2.4m
ST	2001/4/23	Concentration (ppm)	28	79	41	27
ST	2001/4/23	Weight (g)	3.9	270	11	25
ST	2001/4/23	Volume (L)	0.020	25	31	12
ST	2001/4/23	Concentration (ppm)	200	540	370	230
ST	2001/4/23	Weight (g)	1900	5500	4400	2300
ST	2001/4/23	Volume (L)	15	1600	2000	6300
ST	2001/4/23	Concentration (ppm)	10	440	130	3600
ST	2001/4/23	Weight (g)	10	<10	<10	22
ST	2001/4/23	Volume (L)	10	<10	12.1	15.0
ST	2001/4/23	Concentration (ppm)	14.1	12.1	15.0	8.8

OSCE: U.S. Environmental Protection Agency, Washington, D.C.
 OSHA: U.S. Occupational Safety and Health Administration, Washington, D.C.
 OSHA-Solid Waste Emergency Response, U.S. Environmental Protection Agency, Washington, D.C.
 VPH: Valdez Petroleum Hydrocarbon (TVH) with BTEX subfraction
 EPH: Ethoxylated Petroleum Hydrocarbon - not converted for PAH content
 OCSE: Canadian Council of Ministers of the Environment - Method for Detecting Water-Soluble Organic Chemicals in Water
 Start: Start of Petroleum Hydrocarbon in Soil - Test Method, Revision 5.0

Note: Accurate recovery for tributyltin levels not obtained due to interference from high hydrocarbon content sample.

Report revised by:

James A. LeBlanc, B.Sc.
Plant Manager
Laboratory Services

Brenda Chomlin
Manager
Laboratory Services

An AVEC Company

**AMEC Earth & Environmental
Analytical Chemistry Laboratory**

Date Required: April 30/01

Attn: AMEC Earth & Enviro.

Attn: Bynski, David

Date: April 23/01

File# 41036a
Project# WX05154
Date Sampled: April 19/01

**WATERS
PRELIMINARY RESULTS**

Lab. No.	3025	3026	3026	3026
Sample ID	GW-TH2	GW-TH3	GW-TH3	Duplicate
ST 2001/4/23				
Benzene	0.002	14	14	15
ST 2001/4/23				
Toluene	0.002	14	2.2	2.3
ST 2001/4/23				
Ethylbenzene	0.002	2.1	1.4	1.5
ST 2001/4/23				
Xylenes	0.003	12	7.3	7.8
ST 2001/4/23				
TVH (C ₈ - C ₁₀)	0.050	71	30	33
ST 2001/4/23				
TVH (C ₈ - C ₁₀)	0.030	3.8	8.2	
ST 2001/4/23				
TPH	0.030	74.9	39.2	

NOTE: Method Detection Limit
TVH - Total Volatile Hydrocarbons (Purgeable)
TVH - Total Semi-Volatile Hydrocarbons (Extractable)
TPH - Total Petroleum Hydrocarbons (Sum of TVH + TVH)
EPA - U.S. Environmental Protection Agency, (USEPA) Test Methods for Evaluation of Solid Waste and Effluent Liquids
Office Solid Waste Emergency Response, U.S. Environmental Protection Agency, Washington, D.C.

Report reviewed by:

Jeanne A. Lablanc, B.Sc.
Quality Manager
Laboratory Services

Brenda Chomlin
Manager
Laboratory Services