

HUFF & HUFF, INC. Environmental Consultants

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August 6, 1997

Mr. Michael G. Farley
BRR Program Assistant
Wisconsin Department of Natural Resources
Box 12436
4041 N. Richards Street
Milwaukee, Wisconsin 53212

Re: Subsurface Investigation Work Plan

NT Dor-O-Matic; Greendale, Wisconsin

BRRTS#: 02-41-118817 Facility ID#: 241050590

Facility 1D#. 24103

RECEIVED

D.N.R. SED Hatrs. Milwaukee, WI

Dear Mr. Farley:

The June 12, 1997 Work Plan submitted to you indicated that the results of the subsurface investigation would be issued on July 25, 1997 for the above-referenced site. The Work Plan was based on the premise of encountering ground water, which was to be investigated with the installation of four monitoring wells.

The subsurface investigation was conducted on June 12, 1997 as indicated. The initial borings were conducted on the north side of the building as located on Figure 1. Soil boring no. 102 (SB-102) was conducted to a depth of 15 feet and SB-101 was conducted to a depth of 20 feet. Samples were collected continuously with split spoon samplers in each boring location. The strata encountered did not indicate any ground water bearing strata. No ground water was observed in either boring after one hour of observation from the time of auger removal from the borehole.

Due to the absence of a ground water bearing stratum, no monitoring wells were installed. One Shelby tube sample was collected and a hydraulic conductivity test was conducted on the sample. The hydraulic conductivity of the soil sample collected at a depth interval of 9 to 11 feet is 1.86×10^{-8} cm/sec. The boring logs developed from the subsurface investigation are attached. The soils in the area are generally clayey silts with some gravel and sand. The clayey silt becomes very tight at a depth of approximately 11 feet. A Shelby tube sample was attempted at this depth; however, the tube could not be pushed through the stiff clayey silt.

The soil sample results reported trichloroethylene and several other contaminants are present in the soil. The levels detected do not exceed the USEPA Site Screening Levels (SSLs) for the inhalation and ingestion exposure routes, although the results are above the migration to ground water exposure

Mr. Michael G. Farley August 6, 1997 Page No. 2

route. The analytical results for the parameters detected are presented in the attached table, and for reference are compared to the USEPA SSLs. Five parameters; trichloroethylene, dichloromethane, 1,1-dichloroethylene, tetrachloroethylene, and cis-1, 2-dichloroethylene exceed the migration to ground water pathway.

Water samples were collected from Dale Creek located north of the site. Samples were collected less than 50 feet upstream (U/S) and downstream (D/S) of the site. Only chloromethane was detected at 0.006 mg/l in the upstream sample. The downstream sample results did not detect anything above the detection limits. The results of the water samples are also included on the attached table.

Given the geological observations during the subsurface investigation and the analytical results, a site evaluation will be conducted to determine appropriate site specific cleanup objectives. It is our intention to use the Seasonal Soil Compartment Model (SESOIL) and The New SESOIL User's Guide (Revision 1.6), (WDNR, 1993) for guidance. If the results of the SESOIL modeling indicate that ground water may be impacted, a ground water fate and transport model will also be used. The modeling however is a more intensive process that includes gathering site specific and regional data. The proposed submittal date for the modeling results will be September 15, 1997. This may vary depending upon the availability of the required data.

Please do not hesitate to call if there are any questions.

Sincerely,

James E. Huff, P.E.

Vice-President

JEH:sdl

Enclosures

Mr. Donald Straub, NT Dor-O-Matic

Mr. Udo Schultz, NT Dor-O-Matic

Ms. Laura Leonard, Sidley & Austin

Mr. Kevin Shaver, Montgomery Watson

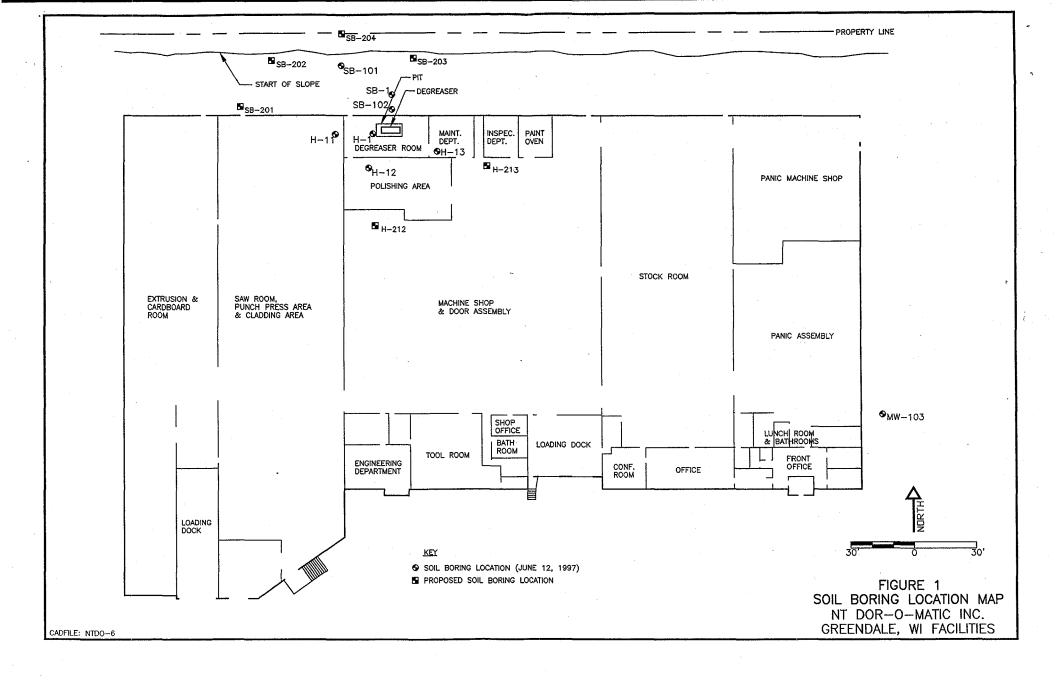
SOIL SAMPLE ANALYTICAL RESULTS

NT DOR-O-MATIC Greendale, Wisconsin 12-Jun-97

	Depth		Parameter, mg/kg																
Soil Boring ID	Interval, ft	TTE	TCE	cis- 1,2-DCE	1,1,1,- TCA	1,1- DCA	1,1- DCE	1,2- DCA	Vinyl Chloride	Chloro- methane	Dichloro- methane	Trichloro- fluoromethane	Toluene	Ethyl- benzene	Xylenes	Styrene	Acetone	Chloro- form cl	Bromodi- hloromethane
Reference Site Screening Levels	Ingestion Inhalation Migration to GW	12.000 11.000 0.060	58.000 5.000 0.060		1200.000 2.000	7800.000 1300.000 23.000	1.000 0.070 0.060	7.000 0.400 0.020	0,300 0.030 0.010		85.000 13.000 0.020		16000.000 650.000 12.000	7800.000 400.000 13.000	160000.000 410.000 190.000	16000.000 1500.000 4.000	7800,000 100000,000 16.000	100.000 0.300 0.600	10.000 3000.000 0.600
H-11	1 - 3	<0.0007	0.0497	<0.0005	0.0030	<0.0005		<0.0016	< 0.0007	0.0110	0.0043	< 0.0005	0.0010	<0.0006	< 0.0006	<0.0005	0.0504	<0.0005	< 0.0006
H-11	7 - 9	0.0016	1.4600	0.0016	0.1340	0.0019		<0.0016	<0.0007	0.0045	0.0046	<0.0005	0.0009	<0.0006	<0.0006	<0.0005	<0.0100	<0.0005	<0.0006
H-11	7-9 (DUP)	0.0022	0.7050	0.0024	0.1200	0.0019		<0.0016	<0.0007	0.0031	0.0068	< 0.0005	0.0012	<0.0006	<0.0006	<0.0005	<0.0100	<0.0005	<0.0006
H-11	9 - 11	0.0014	0.7020	0.0009	0.0546	<0.0005	0.0009	0.0027	<0.0007	<0.0010	0.0083	<0.0005	0.0010	<0.0006	0.0010	<0.0005	<0.0100	0.0007	<0.0006
H-12	1 - 3	0.001	1.1600	<0.0005	0.0640	0.0023	0.0027	<0.0016	<0.0007	<0.0010	0.0051	<0.0005	0.0014	0.0116	0.0653	<0.0005	<0.0100	0.0011	<0.0006
H-12	7-9	0.0023	3.7900	0.0014	<0.0005	0.0207	0.0661	< 0.0016	< 0.0007	<0.0010	<0.0008	< 0.0005	0.0017	0.0112	0.0433	< 0.0005	< 0.0100	0.0022	< 0.0006
H-12	9 - 11	0.0021	4.6500	0.0012	0.5850	0.0138	0.0310	<0.0016	<0.0007	<0.0010	0.0050	<0.0005	0.0016	<0.0006	0.0011	<0.0005	<0.0100	0.0019	0.0506
H-13	1-3	0.0013	0.2490	0.0047	0.0194	0.0207	0.0034	0.0095 *	<0.0007	<0.0010	0.0295	0.0020	0.0026	<0.0006	0.0021	0.0011	<0.0100	0.0016	<0.0006
H-13	9 - 11	<0.0007	0.0044	<0.0005	0.0143	<0.0005	0.0009	<0.0016	<0.0007	<0.0010	0.0046	<0.0005	<0.0005	<0.0006	<0.0006	<0.0005	<0.0100	<0.0005	<0.0006
SB-101	1 - 3	0.0289	0.2420	0.00148	<0.0005	<0.0005	<0.0005	<0.0016	<0.0007	<0.0010	0.0038	<0.0005	<0.0005	<0.0006	<0.0006	0.0011	<0.0100	<0.0005	<0.0006
SB-101	11 - 13	0.0660	0.6450	0.4240	<0.0005	< 0.0005	<0.0005	< 0.0016	< 0.0007	< 0.0010	0.0073	< 0.0005	0.0021	< 0.0006	0.0019	0.0017	< 0.0100	<0.0005	< 0.0006
SB-101	18 - 20	0.1130	1.8600	0.0737	0.0141	0.0015	<0.0005	<0.0016	<0.0007	<0.0010	0.0116	<0.0005	0.0018	<0.0006	0.0011	0.0009	<0.0100	<0.0005	<0.0006
SB-102	1-3	0.0011	0.0110	<0.0005	<0.0005	<0.0005	<0.0005	<0.0016	<0.0007	<0.0010	0.0024	<0.0005	0.0015	<0.0006	<0.0006	<0.0005	<0.0100	0.001	<0.0006
SB-102	7-9	0.0014	0.0108	< 0.0005	<0.0005	< 0.0005	< 0.0005	< 0.0016	< 0.0007	0.0023	0.0044	< 0.0005	0.0013	< 0.0006	0.0015	< 0.0005	< 0.0100	<0.0005	< 0.0006
SB-102	11 - 13	0.0007	0.0130	< 0.0005	<0.0005	< 0.0005	<0.0005	< 0.0016	< 0.0007	0.0044	0.0037	< 0.0005	0.0009	< 0.0006	< 0.0006	< 0.0005	< 0.0100	<0.0005	< 0.0006
SB-102	11 - 13 (DUP)	< 0.0007	0.0120	< 0.0005	0.0017	< 0.0005	< 0.0005	< 0.0016	< 0.0007	0.0017	0.0025	< 0.0005	0.0008	< 0.0006	< 0.0006	< 0.0005	< 0.0100	< 0.0005	< 0.0006
SB-102	13 - 15	0.0007	0.0270	<0.0005	0.0110	<0.0005	<0.0005	<0.0016	<0.0007	0.0020	0.0051	<0.0005	0.0010	<0.0006	<0.0006	<0.0005	<0.0100	<0.0005	<0.0006
Water Grab	U/S - Dale	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0016	<0.0005	0.0061	<0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0100	<0.0005	<0.0006
Water Grab	D/S - Dale	<0.0005	<0.0005	< 0.0005	< 0.0005	< 0.0005	<0.0005	< 0.0016	< 0.0005	<0.0010	<0.0008	< 0.0005	<0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0100	<0.0005	<0.0006
Water Grab	Trip Blank	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	<0.0005	<0.0016	<0.0005	<0.0020	< 0.0020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0100	< 0.0005	< 0.0006

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^{*} Exceeds WDNR Protection of Ground Water screening level



Sample	State of Wisconsin Route To: Department of Natural Resources Solid Waste							SOIL BORING LOG INFORMATION Haz. Waste Form 4400-122 7-91											
Facility/Project Name NT-DOR-O-MATIC GEOSERVE - Mark Mathey - Driller; Rory Altenberg - Helper NT-DOR-O-MATIC GEOSERVE - Mark Mathey - Driller; Rory Altenberg - 6/12/97 G-1/2/97 G-1/2	Dopare	mone of		ur 1000						i Tanks			FUE	III 4400	-122			7-91	
Toposil Sample Soil/Rock Description Sample Soil/Rock Description Sample						Wastewater				rces					_	1			
NT-DOR-O-MATIC GEOSERVE - Mark Mathey - Driller; Rory Altenberg - Helper Flore String Drilled by Grims name and name of crew chief) GEOSERVE - Mark Mathey - Driller; Rory Altenberg - 6/12/97 6-1/4" I.D. HSA Flore String Driller Strated Flore String Location State Plane I/4 of I/4 of Section 34 T 6 N N.R 21E	Facility	/Projec	t Nam	e			IXI C			ermit/M	onitori	ng Nun	ober	Boring			10	<u> </u>	
Boring Drilled By (Firm name and same of ever whelp GEOSERYE - Mark Mathey - Driller; Rory Altenberg - Helpper FROR Feesily Well No. Will Drillers Will No. Well installed No. R. S/C/N Lat O'" County Milwaukee DNR County Code DNR County Code DNR County Code Civil Towar/City/ or Village Greendale Sample Soil/Rock Description And Geologic Origin For Each Major Unit SAND, silty, medium to fine grained, with some gravel, brown, loose (no odor) 18.5 push 18.5 pus	-	-												1 -		. .			
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DERK Facility Wall No. Will Judgote Well No. Common Well Name Final Static Water Level Surface Elevation Borreloto Diameter No. well installed Soring Location 1/4 of 1/4 of Section 34			VE - 1	Mark	Mathey - Drill	ler; Rory Altenber		6	/12/97	,		6/ 1	12/97		6-1/4" I.D. HSA				
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DNR County Code Civil Town/City/ or Village Greendale	State 1		λ f	1/2	Lof Section 34	<u>-</u>			0 + #	ŀ		E _e			,	_			
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512 West Burlington #100 LaGrange, IL 60525			y that	the info	rmation on this fo	orm is true and correct t									<u></u>				
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				☐ Wast		ater	Resou						Pag	<u>.</u> 1	of 1			
Facility	//Project						nse/Pe	rmit/M	onitorin	g Nun	iber							
Boring	Drilled	By (F	irm nan	ne and name of crew cl			Date	Drilli	ng Star	ted	Date	Drillin		Drillin	g Meth	od		
Help	er			Mathey - Driller;	Rory Altenber			12/97				12/97	4-1/4" I.D. HSA					
DNR	acility	Well N	lo. W	Unique Well No.	Fina	1 Statio	Water		i	ace Ele		В	orehole Diameter					
Boring	Location	on			<u> </u>		Fee					n (If ap	8-1/2" Inches					
State 1		_				Lat	011					N	_		ΞE			
County	1/4 (of	1/4	of Section 34	T 6 N N,R 21	NR Cou		ong Code		own/Cit	y/ or		et 🗆	S		Feet [<u> </u>	
	vauke	e						Gree		.,. o.	· mage							
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		ıts	<u>.</u>	1	k Description							-						
i.	ı (in ered	Com	ln F		ogic Origin Fo	r		S	္ပ	티	А	atio	r ië			ı	ents	
Number	Length (in) Recovered	Blow Counts	Depth In Feet	Each	Major Unit			SC	aph	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments	
<u>ź</u>	<u> </u>	B	ă					ם	53	Ν̈́	<u>Id</u>	P.St.	≥ 3	22	四日	<u> </u>	<u> </u>	
1 \(\tau	18	push	Ē	Topsoil			_/				4.3	-				. I		
·χ		Publi	-2	SILT, clayey, so organic mat'l, da	ome sand, trace	e wn												
$\langle \cdot \rangle$	18	push	Ė	\(no oc		ML	_/	ML			3.6							
X			E 4	SILT, clayey, so	ome sand, dam	ıp, dar	k							1		į		
X	18.5	push	<u>-</u> 6	brown/brown (no odor)	ML						2.6							
2 😾	14.5	push	<u>-</u> 8	SILT, clayey, so slightly damp, be	ome sand and g	gravel,			+.		3.7						!	
X	18.5	push	10	(no odor)	1	ML_	_/	CL ML			5.0							
3 🗸	18.5	43	- 12	CLAY, very silt	y, some sand,	trace					5.5							
4	18	push	E -14	gravel, slightly of (no odor) CL	iamp, brown						4.2					1	o Wate	
Δ			=	Bottom of Hole	No water													
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Department of Natural Resources						'o: i Waste rgency Respons tewater	e	□ H	nderg	round	Tanks				L BOR n 4400		OG INF	ORMA	TION 7-91		
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	_	ct Nam								se/Pe	rmit/M	onitorin	g Nun	Number Boring Number H-11							
		O-M		ne and name o	of crew c	hief)	····		Date	Drilli	ng Start	ted	Date	Drillin			Drillin	g Meth	od		
-		-		Mathey				12/97			6/12/97				Geoprobe						
DNR Facility Wall No. WI Unique Well No. Common Well Name No. Well installed										Statio	Water Feet		.		ce Elevation Borehole Diameter N/D Feet 1-1/2" Inches						
Boring Location											0 ! !!					n (If ap	plicable		iciica		
State I	Plane 1/4	of	1/4	of Section	34	N, E s T6Nn,r2	/C/N 1 E	N	Lo	Lat	0 1 11			Fe	et 🗆		Ī	Feet [] E] w		
County Milv	vauke	e						R Cou	nty C	ode	Civil T Gree	own/Ci ndale	ty/ or	Village							
San	ple				************		L								Soil	Proper	ties				
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☐ Emergency Response ☐ U							U	Haz. Waste Form 4400-122 7-9 Underground Tanks Water Resources									7-91				
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Facility NT-	-	-O-M							Lice	ense/Pc	rmic/ivi	ontorir	g Number Boring Number H-12								
Boring	Drille	d By (F	irm nar	ne and name	of crew	chief)	······································		Date	Drilli	ng Star	ted	Date Drilling Completed Drilling Method								
GEOSERVE, Kent Mathey											12/97			6/1	2/97	Geoprobe					
DNR Facility Well No. WI Unique Well No. Common Well Name No well installed											Water Fee		1	Surface Elevation Borehole Diameter N/D Feet 1-1/2" Inche							
Boring		ion				N E	0.40	(3.)	1	Lat	0 ' "		Loca	d Grid			plicabl	è)			
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County	vauke	ee					DN	IR Cou	nty (Code		own/Cindale	ty/ or	Village							
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Number	Length (in) Recovered	Blow Counts	Depth In Feet		d Geo	ock Descrip blogic Origi h Major Ur	in For			USCS	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments		
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I hereb	<u> </u>	fy that	the info	rmation on th	is form	is true and co	rrect to		st of				·c								
Signat									-11111		512 We		ngton	#100 I Fax: (60525				

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Facility	/Proje	ct Nam	e						License	/Per	mit/M	onitorir	g Nun	nber	Boring	Numb				
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_		-		ne and name	of crew c	hief)			Date Dr	g Star	ted	Date	Date Drilling Completed				Drilling Method			
GEOSERVE, Kent Mathey											2/97				12/97	Geoprobe				
DNR Facility Well No. WI Unique Well No. Common Well Name No well installed										atic	Water Fee	Level t		urface Elevation Borehole Diameter N/D Feet 1-1/2" Inches						
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County	,							R Cou	nty Cod	e (ty/ or	Village					 _	
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Number	Length (in) Recovered	Blow Counts	Depth In Feet	i .	nd Geol	ck Descripti ogic Origin Major Unit	For		8 0 8 11		Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments	
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		fy that		(no odor Bottom) of Hole,	CL no water		the be	st of my	' kna										
Signat	ure						-	F	Firm	5	512 W		ington	#100 I Fax: (