

**FIRST ANNUAL INTERIM MEASURES
CAPTURE ZONE REPORT
JANUARY 31, 1996 THROUGH
JANUARY 31, 1997
DELPHI HARRISON THERMAL SYSTEMS
MORAINE, OHIO**

March 1997

Prepared for

Delphi Harrison Thermal Systems
Moraine, Ohio

Prepared by

Geraghty & Miller, Inc.
4700 Lakehurst Court, Suite 100
Dublin, Ohio 43017
(614) 764-2310



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INTRODUCTION

Delphi Harrison Thermal Systems (Delphi Thermal) of General Motors Corporation (GMC) of Moraine, Ohio, has been operating a groundwater recovery and treatment system at their Moraine facility since January 31, 1996 as a component of interim measures required by the United States Environmental Protection Agency (U.S. EPA). The objective of these interim measures, as stated in the Final Interim Measures Design Plans (Geraghty & Miller, Inc. 1995), is to control the migration of groundwater that contains volatile organic compounds (VOCs). The Final Interim Measures Design Plans was approved by the U.S. EPA in a July 31, 1995 letter.

These planned interim measures consist of continued pumping of Montgomery County Well DN-13, screened in the lower aquifer, at a rate of 2.663 million gallons per day (mgd) and pumping Delphi Thermal Recovery Well 2 (TW-2), screened in the upper aquifer, at a rate of 0.239 mgd (166 gallons per minute) as stated in the Final Interim Measures Design Plans (Geraghty & Miller, Inc. 1995). DN-13 is a well that Montgomery County has been using in a Pump-to-Waste Program since March 1990. TW-2 is a component of an interim measures system which was designed, installed, started up, and monitored in compliance with the approved Final Interim Measures Design Plans (Geraghty & Miller, Inc. 1995). The groundwater recovered by TW-2 is treated through an air stripper tower and discharged through Delphi Thermal's National Pollutant Discharge Elimination System (NPDES) permitted outfall to the Miami River.

Data collected to monitor the effectiveness of the interim measures system during the first 7 months of operation (January 31, 1996 through August 29, 1996) was summarized in a



report titled Interim Measures Capture Zone Monitoring (Geraghty & Miller, Inc. 1996) in response to a request from U.S. EPA, through, PRC Environmental Management. This report provides a summary of data collected during the entire first year of operation to monitor the effectiveness of the interim measures system as required by the approved Final Interim Measures Design Plans (Geraghty & Miller, Inc. 1995).

TW-2 OPERATION

Groundwater recovery from TW-2 began on the afternoon of January 31, 1996. For the period from January 31, 1996 through January 30, 1997, the system has recovered and treated a total of 82,041,370 gallons of water at an average flow rate of approximately 159 gallons per minute.

During the first 7 months of operation, the groundwater recovery system operated almost continuously at an average flow rate of 168 gpm, experiencing only minor, short duration outages associated with power failures or to address system maintenance requirements.

During September, a high pressure condition was identified in the air stripper tower and TW-2 began experiencing a decrease in flow rate. To address the high pressure condition, Delphi Thermal shut the system down on September 5, 1996 and chemically cleaned the tower. Several actions were taken to evaluate the decrease in flow rate through September and October, including replacing the pump, down-hole televising of TW-2, cleaning of the flow meter piping, and installation of a stilling well and pressure gauge at the well. On October 31, Delphi Thermal again replaced the existing 3-stage, 7.5 horsepower well pump this time with a 4-stage, 10 horsepower well pump, capable of maintaining the flow rate at 170 gpm.



When the larger pump increased the groundwater extraction rate, the water level within TW-2 dropped below the top of the well screen. To avoid drawdown levels within the well which could cause damage to the well screen and/or the pump, Delphi Thermal proposed to operate TW-2 at a reduced flow rate as necessary to maintain the water level in TW-2 at least 0.5 feet above the top of the well screen. This proposal was submitted to U.S. EPA in the October 1996 Monthly Technical Progress Report and was approved by U.S. EPA on November 6, 1996.

From November 1996 through January 30, 1997, the Interim Measures remediation system operated continuously with the exception of a shut down for 11.75 hours on December 18, 1996 due to high pressure in the air stripper tower. This high pressure condition was corrected by cleaning the distribution tray. Delphi Thermal continued to adjust the TW-2 flow rate and monitor the water level in TW-2 throughout this period, as recommended in the October 1996 Monthly Technical Progress Report and approved by U.S. EPA.

DN-13 OPERATION

According to Montgomery County, Well DN-13 was shutdown from approximately January 20, 1996 to February 14, 1996 due to electrical problems. Following this shutdown, Well DN-13 operated continuously for the remainder of the reporting period (January 31, 1996 through January 31, 1997) at a rate of 2.8 mgd, with the exception of scheduled one-day shutdowns to facilitate groundwater quality sampling and any required maintenance. During August 1997, an agreement between GMC and Montgomery County was finalized that provides for Montgomery County to continue to operate County Well DN-13 and for GMC to reimburse the County for the operating and maintenance costs.



REGULATORY MONITORING

The Air Permit and NPDES Permit issued to Delphi Thermal for the groundwater recovery and treatment system require periodic monitoring and reporting of water quality in the influent and effluent streams, and pumping flow rates. Samples of groundwater being pumped through the air stripping treatment tower were collected and analyzed monthly by NET, Inc., Dayton Division, in Dayton, Ohio for the parameters required in the permits. All analyses were conducted in accordance with methods specified in the Final Interim Measures Design Plans (Geraghty & Miller, Inc. 1995) and Regulation 40 CFR Part 136 "Test Procedures for the Analysis of Pollutants." The results of the influent and effluent sampling are presented in Tables 1 and 2, respectively.

Influent sampling results were well within the required Air Permit limits during the first year of operation. Effluent sampling results were within the required NPDES Permit limits with the exception of an oil and grease exceedance on November 19, 1996. Results of the oil and grease exceedance were received by Delphi Thermal on December 3, 1996. Oil and grease was detected at a concentration of 33 mg/L, exceeding the NPDES Permit limit of 10 mg/L. The effluent of the air stripping tower was re-sampled on December 4, 1996 for analyses of oil and grease. Results of effluent samples collected since the November 1996 exceedance (December 4, 1996 resampling and the monthly permit sampling events in December 1996 and January 1997) all indicate that the system is meeting the NPDES requirements.

Delphi Thermal reported the exceedance to the Ohio EPA Central Office (CO) on December 4, 1996 in accordance with the requirements of NPDES Permit #11C00008*FD. Report No. 9612-57-4963 was assigned to the report by Ohio EPA-CO. Additionally, the incident was reported by a telephone call to Ohio EPA Southwest District Office (SWDO), followed by written confirmation in a letter dated December 6, 1996 from Delphi Thermal to Ohio EPA-SWDO in accordance with Paragraph 12.C of the aforementioned NPDES Permit.



The oil and grease excursion was likely associated with the groundwater table persisting below the top of the TW-2 well screen during the November sampling. To address this matter, Delphi Thermal continued to pump TW-2 at a reduced flow rate to bring the water table above the well screen during December 1996. Analytical results collected from effluent samples collected following the November 19, 1996 sampling have shown no detectable levels of oil and grease. Delphi Thermal continues to adjust the flow rate of TW-2 and monitor the water level in TW-2 as recommended in the October Monthly Technical Progress Report and approved by Ohio EPA.

CAPTURE ZONE INFLUENCE MONITORING

The purpose of capture zone influence monitoring is to verify that operation of the groundwater recovery and treatment system meets the interim measures objectives. This monitoring was accomplished by collecting water levels and groundwater quality data from select wells identified in the Final Interim Measures Design Plans (Geraghty & Miller, Inc. 1995).

GROUNDWATER ELEVATION MONITORING

Groundwater elevations for selected upper aquifer monitor wells and lower aquifer monitor wells are presented in Tables 3 and 4, respectively. Groundwater elevations were collected prior to start-up of the system, and then daily for the first week of operation and weekly for the remainder of the first month. For the remainder of the first quarter of operation water levels were collected monthly, and then quarterly thereafter. Data for the third month of monitoring during the first quarter, which was collected on April 24, 1996, is not provided on Tables 3 or 4. This data was inadvertently lost due to personnel changes on the project. However, the 16 other groundwater monitoring events provide sufficient data for



evaluating the effectiveness of the Interim Measures. It should be noted that at the time the groundwater recovery and treatment system was started up, DN-13 was not pumping due to electrical problems. DN-13 was restarted on February 14, 1996.

To evaluate the effectiveness of Interim Measures, groundwater flow maps were developed. Groundwater flow maps depicting upper and lower aquifer conditions have been developed for pre-start-up conditions (Figures 1 and 2, respectively), after one month of operation (Figures 3 and 4, respectively), and for the 6 month sampling event (Figures 5 and 6, respectively). In the upper aquifer, the difference in configuration of the contours in Figures 3 and 5 is likely due to an elevated water table caused by 14.15 inches of above-normal precipitation from April 1996 through July 1996. Precipitation measurements were recorded by the National Weather Service in Dayton, Ohio. Figures 3 through 6 indicate that the Interim Measures has maintained effective hydraulic control at the southern end of the Delphi Thermal site.

Quarterly groundwater flow maps for the upper and lower aquifers on October 30, 1996 (Figures 7 and 8, respectively) and January 30, 1997 (Figures 9 and 10, respectively) are also provided. Figures 7 and 9 depict groundwater flow in the upper aquifer under reduced pumping rates from Well TW-2. These figures indicate that the Interim Measures continue to be effective at maintaining hydraulic control at the southern end of the Delphi Thermal site, even under conditions of reduced pumping in the upper aquifer.

In summary, these flow maps indicate that flow conditions within the upper and lower aquifer under Interim Measures are consistent with the flow conditions predicted by the capture zone modeling, presented on Figures 2 and 3 of the Final Interim Measures Design Plans (Geraghty & Miller, Inc. 1995).



GROUNDWATER QUALITY MONITORING

Groundwater samples from TW-2 and four monitor wells were collected and analyzed for VOCs by Method 8240 during the month before the system was initially started, and 6 months after operation. Results from these sampling events are provided in Table 5.

CONCLUSIONS

The results of monitoring conducted to evaluate the performance of the interim measures during the first year of operation indicate that the groundwater recovery and treatment system is operating as designed. This conclusion is based on the following facts.

1. Groundwater elevations indicate that an effective zone of influence has been developed by pumping TW-2 and DN-13, such that hydraulic control at the southern end of the facility has been established (Figures 3 through 10) as described in the approved Interim Measures Design Plans.
2. Influent groundwater samples contain VOCs at concentrations below the regulatory requirements set by the Air Permit (Table 1).
3. Effluent (treated) groundwater samples are within allowable limits for all parameters required by the NPDES permit (Table 2), with the exception of one oil and grease exceedance on November 19, 1996.



REFERENCES

Geraghty & Miller, Inc. 1995. Final Interim Measures Design Plans, Harrison Division - General Motors Corporation, Moraine, Ohio. April 1995.

Geraghty & Miller, Inc. 1996. Interim Measures Capture Zone Monitoring. Delphi Harrison Thermal Systems, Moraine, Ohio. September 1996.

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Table 1. Air Permit Influent Monitoring, Interim Measures Capture Zone Monitoring, Delphi Harrison Thermal Systems, Moraine, Ohio.

CONSTITUENT	RESULTS												
	2/13/96	3/12/96	4/10/96	5/7/96	6/4/96	7/3/96	7/30/96	8/14/96	9/24/96	10/22/96	11/19/96	12/17/96	1/14/97
Benzene	2.7	2.3	1.9	--	2.0	2.0	1.6	1.8	2.1	1.8	1.9	1.6	1.3
Chloroethane	14.3	--	--	--	10.5	--	--	10.9	18.6	15.0	20.2	21.5	14.1
1,1-Dichloroethane	75.8	59.8	55.5	28.9	50.7	52.2	52.1	59.3	70.7	56.8	63.3	62.6	54.0
trans-1,2-Dichloroethene	5.6	5.5	5.0	2.6	4.0	4.4	4.8	4.9	5.6	4.6	4.1	3.9	3.3
Ethylbenzene	56.7	43.6	36.4	20.0	21.7	25.6	12.9	14.8	22.1	26.8	32.3	23.0	7.4
Tetrachloroethene	8.2	14.9	19.1	19.9	14.9	14.2	12.2	14.1	18.2	18.8	24.3	27.4	23.6
Toluene	3.1	10.3	3.3	1.1	4.2	15.0	7.7	4.6	1.2	--	1.1	2.6	4.4
1,1,1-Trichloroethane	13.6	16.4	16.9	3.3	9.8	9.2	10.9	12.2	15.6	14.3	17.0	17.1	16.3
Trichloroethene	102.0	87.6	98.8	111.0	90.1	71.5	71.6	77.5	80.4	12.4	80.8	76.8	78.5
Vinyl chloride	21.6	19.6	8.8	--	9.3	10.8	10.9	8.9	12.0	6.6	11.5	13.8	10.8
Xylenes	66.1	41.7	33.4	--	15.6	34.1	29.4	31.6	21.9	20.2	23.0	16.9	22.2
TOTAL*	369.7	301.7	279.1	186.8	232.8	239.0	214.1	240.6	268.4	177.3	279.5	267.2	235.9

* Permit Limit 850 ug/L.

All concentrations in micrograms per liter (ug/L) as reported by the laboratory.

-- Not detected.

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Table 2. NPDES Effluent Monitoring, Interim Measures Capture Zone Monitoring, Delphi Harrison Thermal Systems, Moraine, Ohio.

CONSTITUENT	PERMIT LIMIT	RESULTS													
		2/13/96	3/12/96	4/10/96	5/7/96	6/4/96	7/3/96	7/30/96	8/14/96	9/24/96	10/22/96	11/19/96	12/4/96	12/17/96	1/14/97
Fats, Oils & Grease	10 mg/L	--	--	--	--	--	--	--	--	--	--	33.0	--	--	--
pH, Field	6.5 - 9.0 S.U.	8.26	7.79	8.15	8.05	8.15	8.11	8.06	7.78	8.07	8.08	7.75	NE	8.11	8.11
Benzene	5 ug/L	--	--	--	--	--	--	--	--	--	--	--	NE	--	--
Ethylbenzene	5 ug/L	1.5	1.7	--	--	--	--	--	--	--	--	--	NE	--	--
Toluene	5 ug/L	--	--	--	--	--	--	--	--	--	--	--	NE	--	--
Xylenes	NA	2.2	1.9	--	--	--	--	--	--	--	--	--	NE	--	--

mg/L Milligrams per Liter.

S.U. Standard Units.

ug/L Micrograms per Liter.

-- Not detected.

NA Not applicable.

NE Not evaluated. December 4, 1996 sample collected to evaluate the November 19, 1996 oil and grease concentration.

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Table 3. Water-Level Elevations from Upper Aquifer Monitor Wells, Interim Measures Capture Zone Monitoring, Delphi Harrison Thermal Systems, Moraine, Ohio.

Date	Water-Level Elevation (Feet MSL)										
	GM-2	4S	GM-6	GM-8	GM-16	GM-17	GM-18	WS-17	WS-18	WS-19	TW-2
1/31/96	705.77	705.75	705.80	705.88	705.68	705.46	705.63	705.83	705.79	705.92	705.76
2/1/96	705.66	705.51	705.34	705.62	705.47	705.46	705.42	705.46	704.96	705.67	702.88
2/2/96	705.57	705.38	705.20	705.49	705.34	705.31	705.26	705.32	705.32	705.53	702.71
2/3/96	705.50	705.31	705.12	705.39	705.24	705.22	705.17	705.22	705.24	705.42	702.60
2/4/96	705.41	705.19	704.95	705.24	705.09	705.07	705.03	705.08	705.12	705.29	702.88
2/5/96	705.38	705.15	704.89	705.18	704.99	705.01	704.96	705.00	705.07	705.21	702.34
2/6/96	705.31	705.09	704.82	705.11	704.90	704.93	704.87	704.92	705.01	705.14	702.26
2/7/96	705.31	705.06	704.77	705.06	704.87	704.90	704.84	704.88	704.98	705.08	702.15
2/13/96	705.11	704.86	704.50	704.79	704.58	704.63	704.55	704.63	714.27	704.81	701.60
2/22/96	704.42	704.07	703.63	703.97	703.68	703.73	703.65	703.76	703.93	703.98	700.52
2/27/96	704.28	703.94	703.51	703.86	703.61	703.63	703.56	703.64	703.82	703.85	700.35
3/12/96	704.35	704.03	703.62	703.97	703.72	703.74	703.65	702.90	703.92	704.02	700.33
6/10/96	709.33	708.99	708.64	708.79	708.68	707.79	708.69	708.78	708.93	708.87	705.01
7/31/96	707.21	706.79	706.24	706.45	704.34	706.27	706.14	706.37	706.64	706.46	701.33
10/30/96	704.28	703.89	703.44	703.75	703.42	703.49	703.38	703.38	703.79	703.76	696.77
1/30/97	704.32	704.04	703.65	703.94	703.67	703.70	703.62	703.77	703.92	703.97	698.05

MSL Mean Sea Level

TW-2 Upper Aquifer Recovery Well.

GM-16 water-level elevations are not required in the Final Interim Measures Design Plans (Geraghty & Miller, Inc. 1995) but are being measured for additional data.



Table 4. Water-Level Elevations from Lower Aquifer Monitor Wells, Interim Measures Capture Zone Monitoring, Delphi Harrison Thermal Systems, Moraine, Ohio.

Date	Water-Level Elevation (Feet MSL)											
	GM-1	GM-3	GM-4	GM-5	GM-7R	GM-9	GM-11	GM-13	GM-14	GM-15	GM-20D	M73C
1/31/96	705.56	705.46	705.45	705.50	705.85	705.25	705.53	705.25	705.24	705.16	705.80	704.62
2/1/96	705.52	705.38	705.37	705.43	705.78	705.12	705.22	705.15	705.11	705.06	705.73	704.50
2/2/96	705.44	705.30	705.28	705.36	705.69	705.02	705.13	705.03	705.01	704.93	705.64	704.38
2/3/96	705.37	705.21	705.19	705.27	705.61	704.92	705.04	704.94	704.91	704.83	705.57	704.23
2/4/96	705.31	705.13	705.12	705.21	705.53	704.81	704.93	704.82	704.80	704.73	705.50	704.14
2/5/96	705.27	705.09	705.08	705.16	705.50	704.77	704.89	704.78	704.75	704.67	705.46	704.09
2/6/96	705.23	705.03	705.02	705.11	705.44	704.71	704.83	704.72	704.68	704.61	705.41	704.03
2/7/96	705.23	705.02	704.95	705.11	705.42	704.67	704.81	704.71	704.67	704.56	705.41	704.00
2/13/96	705.11	704.85	704.86	704.97	705.30	704.48	704.65	704.53	704.47	704.38	705.26	703.79
2/22/96	703.99	703.39	703.36	703.61	703.89	702.98	702.70	702.12	702.03	703.91	704.08	701.70
2/27/96	703.94	703.33	703.32	703.55	703.84	702.93	702.65	702.07	701.99	701.87	704.01	NA
3/12/96	703.98	703.39	703.36	703.53	703.90	702.97	702.43	702.13	702.01	701.92	704.06	702.24
6/10/96	708.83	708.18	708.20	708.43	708.63	708.04	708.63	707.09	706.98	706.82	709.03	NA
7/31/96	706.68	705.93	705.89	706.18	706.39	705.51	705.21	704.59	704.45	706.02	706.77	704.63
10/30/96	703.88	703.21	703.18	703.43	703.71	702.72	702.45	701.86	701.74	701.63	703.91	701.95
1/30/97	703.91	703.32	703.31	703.54	703.82	702.91	702.67	702.08	701.94	701.84	704.00	702.20

MSL Mean Sea Level

NA Not Available

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Table 5. Detected Volatile Organic Compounds in Groundwater, Interim Measures Capture Zone Monitoring, Delphi Harrison Thermal Systems, Moraine, Ohio.

DETECTED CONSTITUENTS	TW-2		4S		GM-6		GM-17		GM-18	
	1/31/96	7/31/96	1/31/96	7/31/96	1/31/96	7/31/96	1/31/96	7/31/96	1/31/96	7/31/96
Benzene	3.9	1.6	2.2	--	2.5	--	4.3	1.5	--	1.1
Chlorobenzene	--	5.5	4.9	--	--	--	3.1	6.7	--	--
Chloroethane	17.0	--	19.9	16.0	13.0	24.3	16.4	--	--	--
1,1-Dichloroethane	110.0	50.6	69.6	45.6	88.5	82.6	99.7	28.1	57.1	61.6
1,1-Dichloroethene	1.2	--	--	--	1.2	--	--	--	1.9	--
trans-1,2-Dichloroethene	11.1	4.4	3.7	8.4	9.1	6.5	9.9	2.4	4.1	5.3
cis-1,2-Dichloroethene	--	41.3	--	16.2	--	97.4	--	21.2	--	118.0
Ethylbenzene	127.0	10.7	2.9	4.1	88.8	3.6	--	--	--	--
Tetrachloroethene	--	10.4	--	--	10.3	68.0	1.2	1.2	2.5	3.2
Toluene	4.0	6.7	--	--	1.3	--	--	--	--	--
1,1,1-Trichloroethane	4.9	9.7	--	--	20.0	36.8	7.0	4.7	41.6	41.2
Trichloroethene	43.0	64.6	5.6	8.0	118.0	160.0	39.2	34.5	105.0	110.0
Vinyl Chloride	32.4	8.7	--	14.1	16.3	21.4	16.6	--	--	--
Xylenes	103.0	25.6	1.0	--	37.6	--	--	--	--	--

All concentrations in micrograms per liter (ug/L) as reported by the laboratory.

-- Not detected.

E:\HARRISON\INMEASU\ANNUAL\96TBLS.XLS



DRAFTER: RTS

APPROVED: N.G.

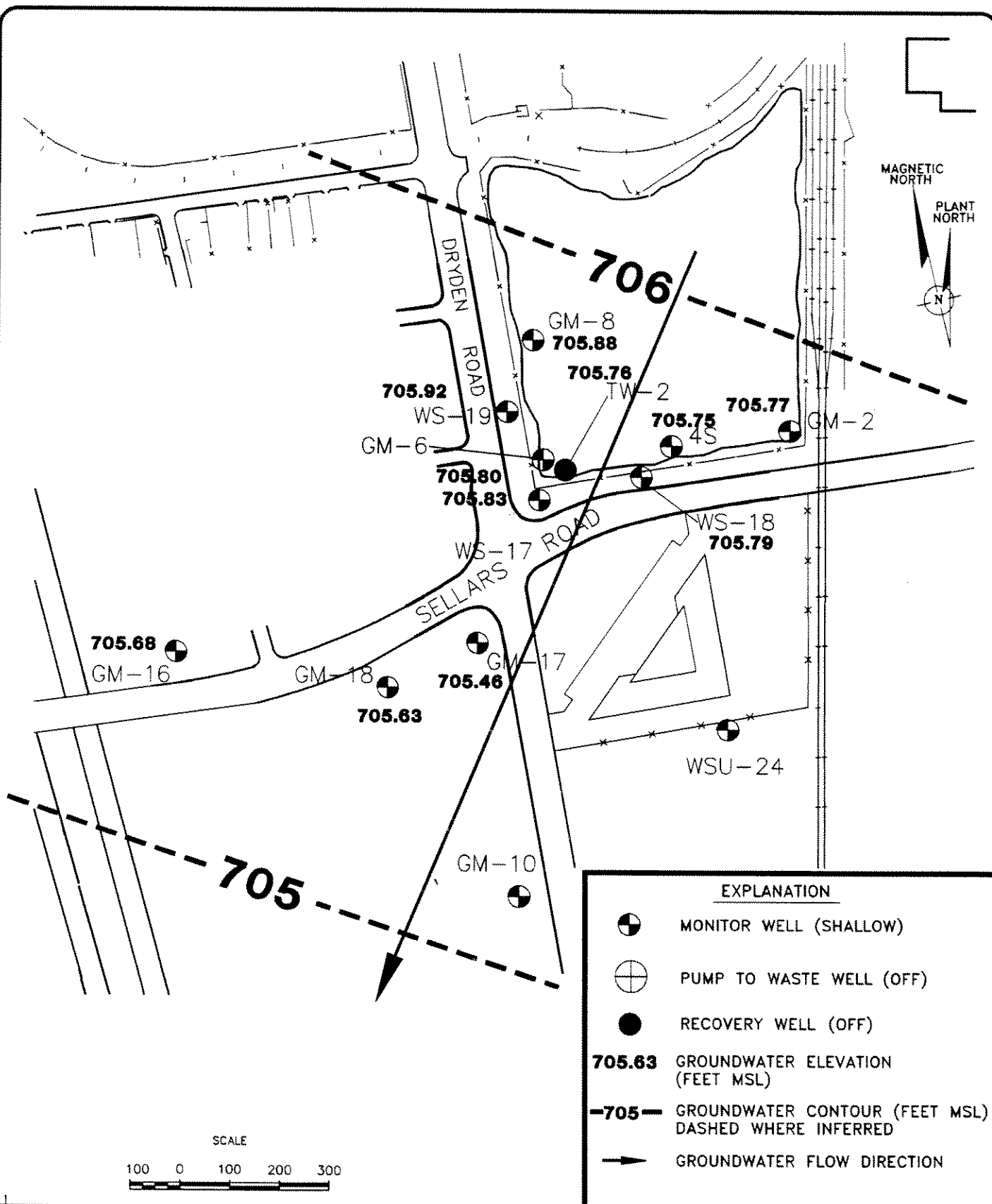
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DRAWING: L1-IM

FILE NO.: HARRVN-B

PRJCT NO.: OH0408.001

DWG DATE: 16MAY94



**GERAGHTY
& MILLER, INC.**
Environmental Services

**PRE-PUMPING WATER-TABLE
SURFACE - SHALLOW ON JANUARY 31, 1996,
CAPTURE ZONE MONITORING**

DELPHI HARRISON THERMAL SYSTEMS,
MORaine, OHIO

FIGURE

1

DRAFTER: RTS

APPROVED: N.G.

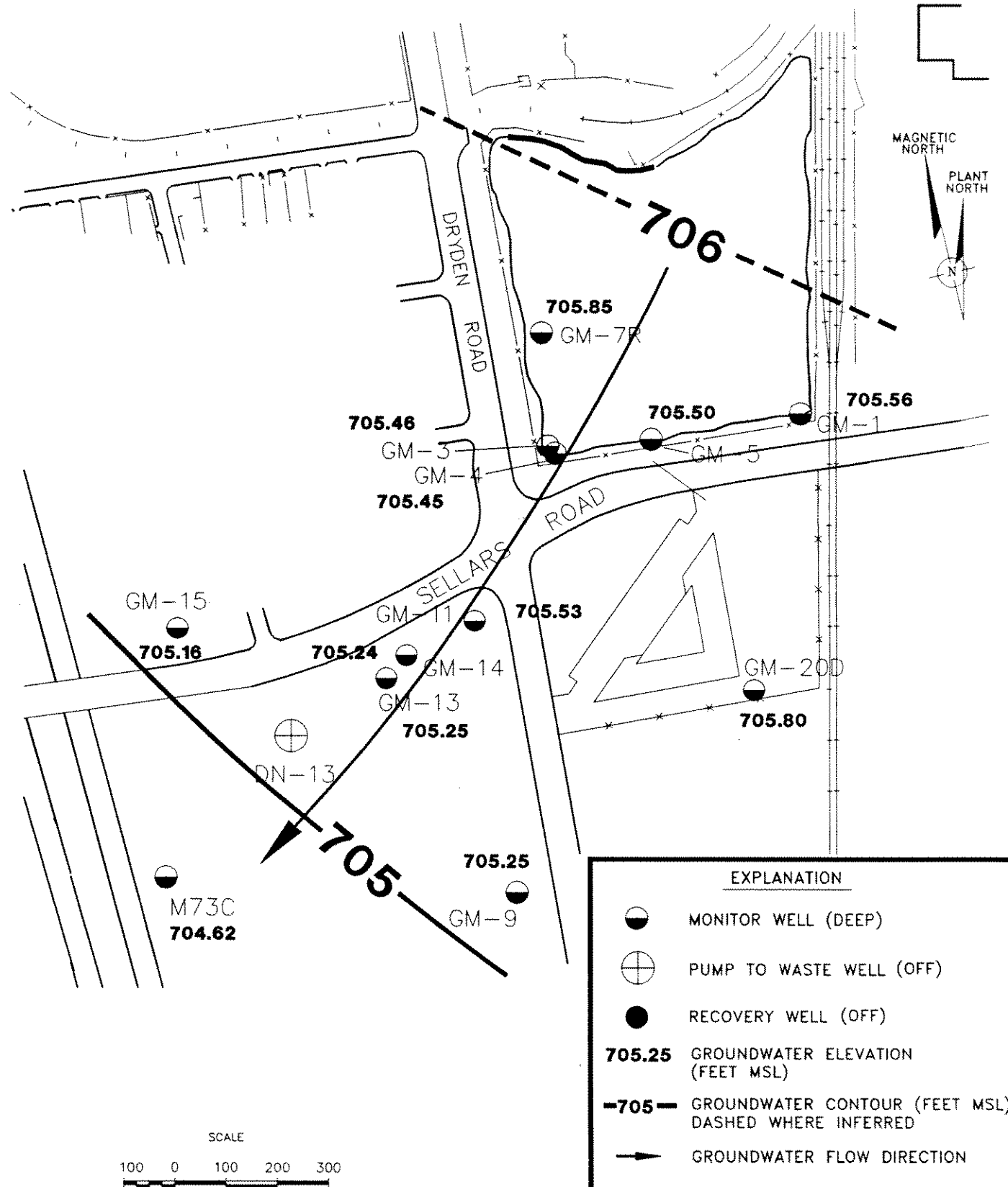
CHECKED: N.G.

DRAWING: L1-IM

FILE NO.: HARR/N-B

PRJCT NO.: OH0408.001

DWG DATE: 16MAY94



EXPLANATION

● MONITOR WELL (DEEP)

⊕ PUMP TO WASTE WELL (OFF)

● RECOVERY WELL (OFF)

705.25 GROUNDWATER ELEVATION (FEET MSL)

-705- GROUNDWATER CONTOUR (FEET MSL) DASHED WHERE INFERRED

→ GROUNDWATER FLOW DIRECTION



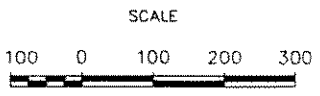
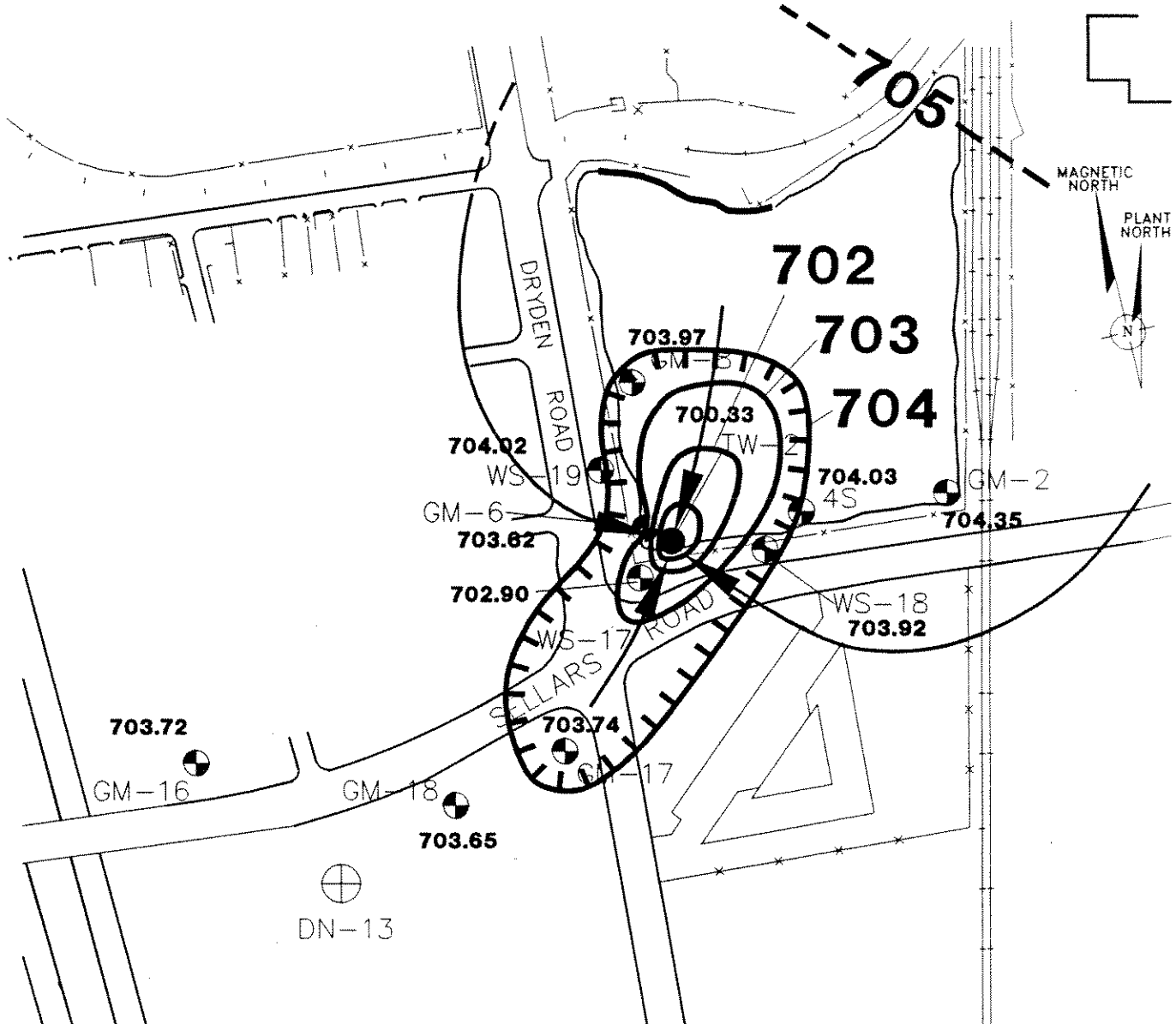
**PRE-PUMPING POTENTIOMETRIC
SURFACE - DEEP ON JANUARY 31, 1996,
CAPTURE ZONE MONITORING**

DELPHI HARRISON THERMAL SYSTEMS,
MORaine, OHIO

FIGURE

2

DWG DATE: 16MAY94
 PRJCT NO.: OH0408.001
 FILE NO.: HARR\N-B
 DRAWING: L1-1M
 CHECKED: N.G.
 APPROVED: N.G.
 DRAFTER: RTS



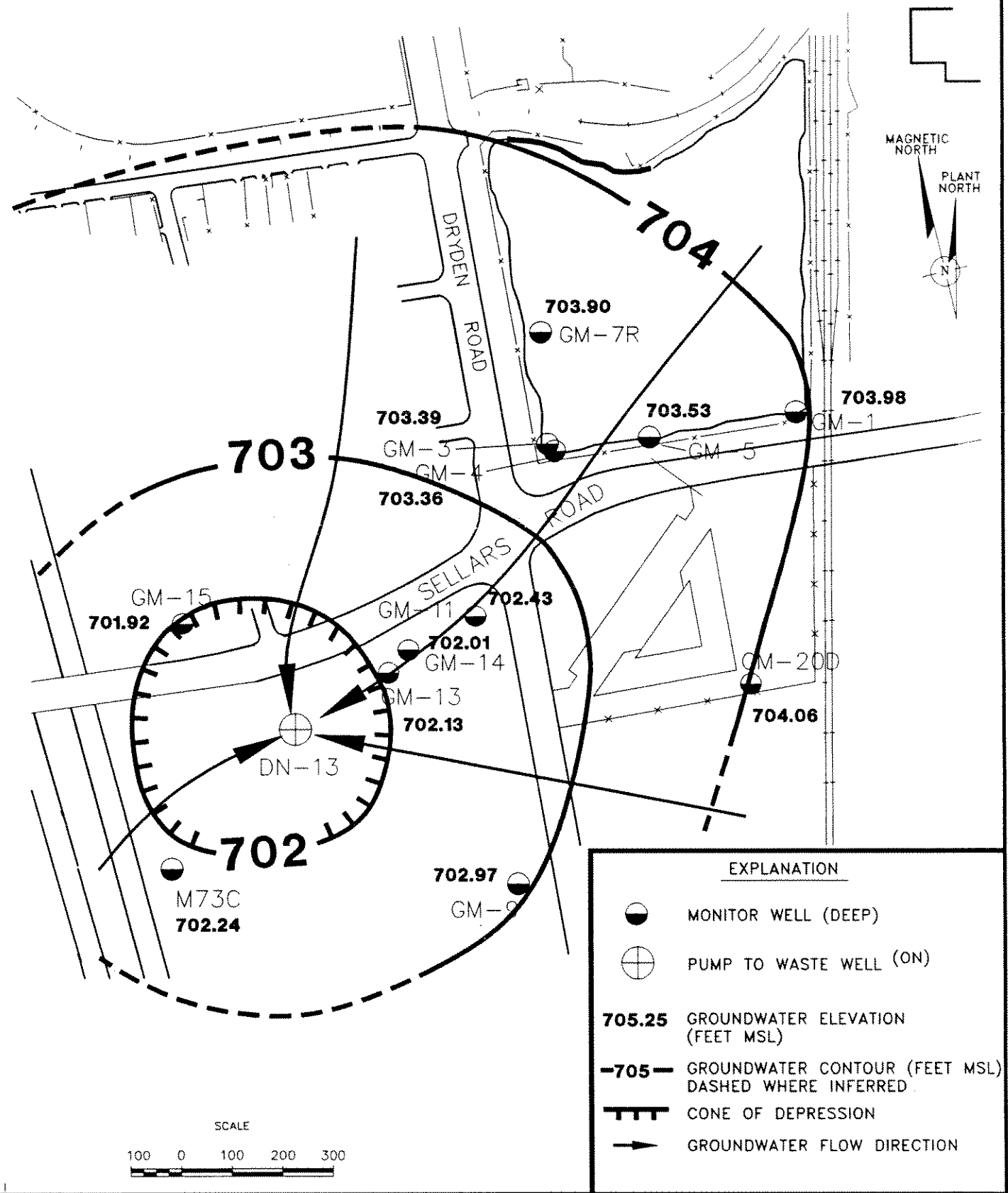
EXPLANATION	
	MONITOR WELL (SHALLOW)
	PUMP TO WASTE WELL (ON)
	RECOVERY WELL (ON)
704.02	GROUNDWATER ELEVATION (FEET MSL)
-705-	GROUNDWATER CONTOUR (FEET MSL) DASHED WHERE INFERRED
	CONE OF DEPRESSION
	GROUNDWATER FLOW DIRECTION



WATER-TABLE SURFACE - SHALLOW
 ON MARCH 12, 1996,
 CAPTURE ZONE MONITORING
 DELPHI HARRISON THERMAL SYSTEMS,
 MORaine, OHIO

FIGURE
3

DWG DATE: 16MAY94 | PRJCT NO.: OH0408.001 | FILE NO.: HARR\N-B | DRAWING: L1-IM | CHECKED: N.G. | APPROVED: N.G. | DRAFTER: RTS



POTENTIOMETRIC SURFACE - DEEP
ON MARCH 12, 1996,
CAPTURE ZONE MONITORING
DELPHI HARRISON THERMAL SYSTEMS,
MORaine, OHIO

DRAFTER: RTS

APPROVED: N.G.

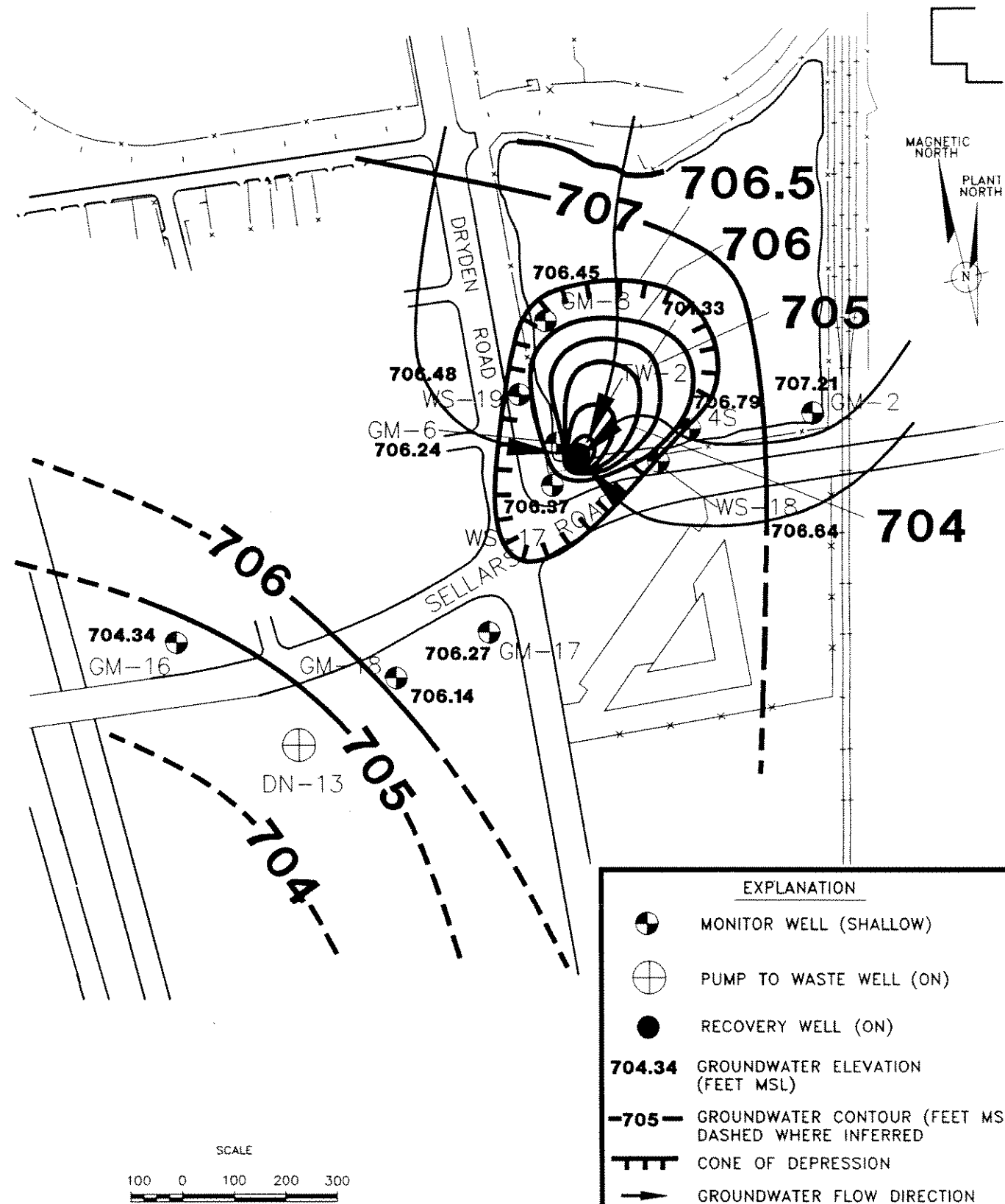
CHECKED: N.G.

DRAWING: L1-IM

FILE NO.: HARR-N-B

PROJECT NO.: OH0408.001

DWG DATE: 16MAY94



GERAGHTY & MILLER, INC.
Environmental Services

WATER-TABLE SURFACE - SHALLOW
ON JULY 31, 1996,
CAPTURE ZONE MONITORING
DELPHI HARRISON THERMAL SYSTEMS,
MORaine, OHIO

FIGURE

5

DRAFTER: RTS

APPROVED: N.G.

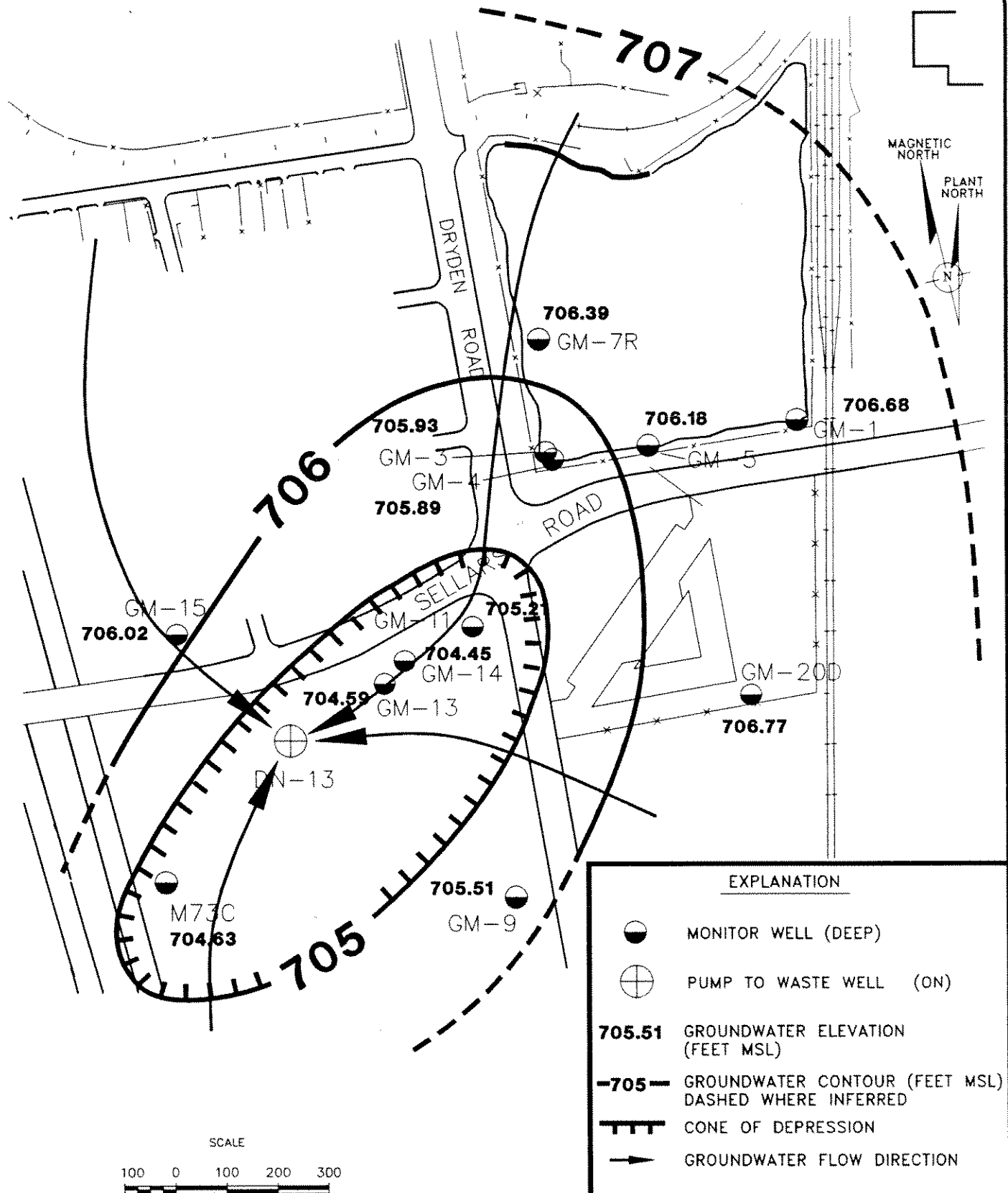
CHECKED: N.G.

DRAWING: LI-IM

FILE NO.: HARR\N-B

PRJCT NO.: OH04US.001

DWG DATE: 16MAY94



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& MILLER, INC.**
Environmental Services

POTENTIOMETRIC SURFACE - DEEP
ON JULY 31, 1996,
CAPTURE ZONE MONITORING
DELPHI HARRISON THERMAL SYSTEMS,
MORAIN, OHIO

FIGURE

6

DRAFTER: RTS

APPROVED: N.G.

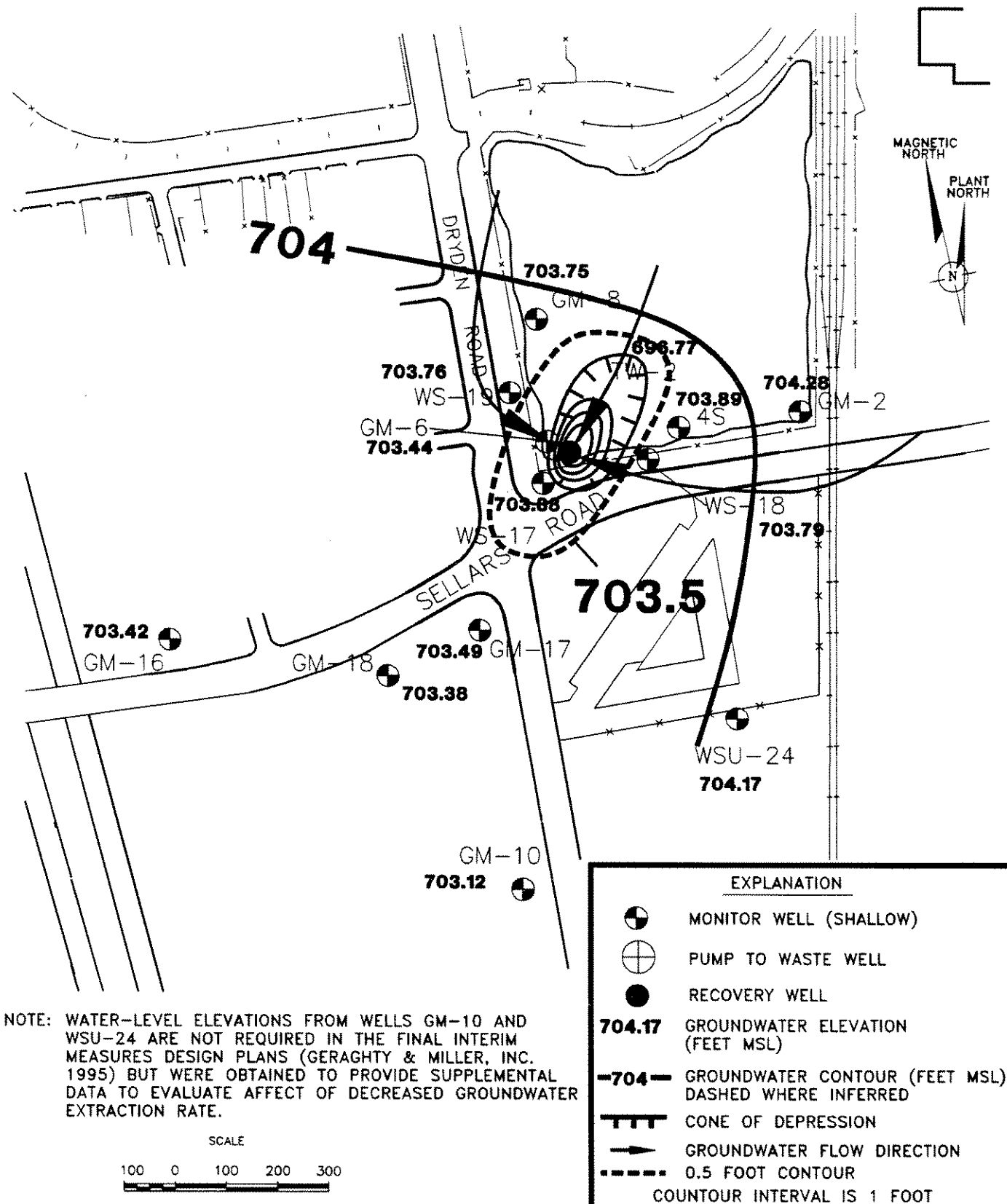
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FILE NO.: HARR\N-B

PRJCT NO.: OH0408.001

DWG DATE: 16MAY94



GERAGHTY & MILLER, INC.
Environmental Services

WATER-TABLE SURFACE - SHALLOW
ON OCTOBER 30, 1996,
CAPTURE ZONE MONITORING
DELPHI HARRISON THERMAL SYSTEMS,
MORaine, OHIO

FIGURE

7

DRAFTER: RTS

APPROVED: N.G.

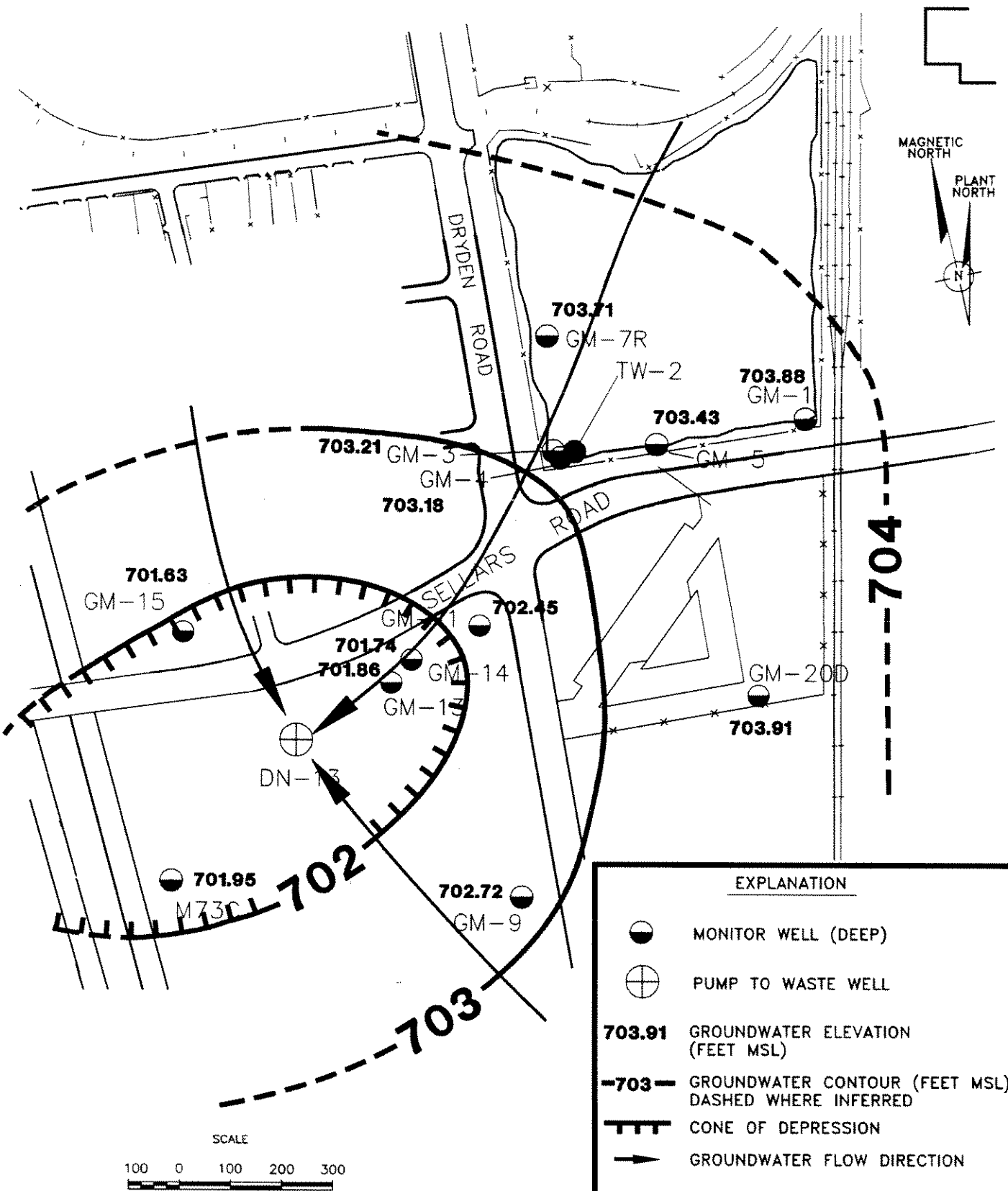
CHECKED: N.G.

DRAWING: L1-TM

HARRISON-B

PRJCT NO.: OH0408.001

DWG DATE: 16MAY94



**GERAGHTY
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Environmental Services

**POTENTIOMETRIC SURFACE - DEEP
ON OCTOBER 30, 1996,
CAPTURE ZONE MONITORING**
DELPHI HARRISON THERMAL SYSTEMS,
MORaine, OHIO

FIGURE

8

DRAFTER: RTS

APPROVED: N.G.

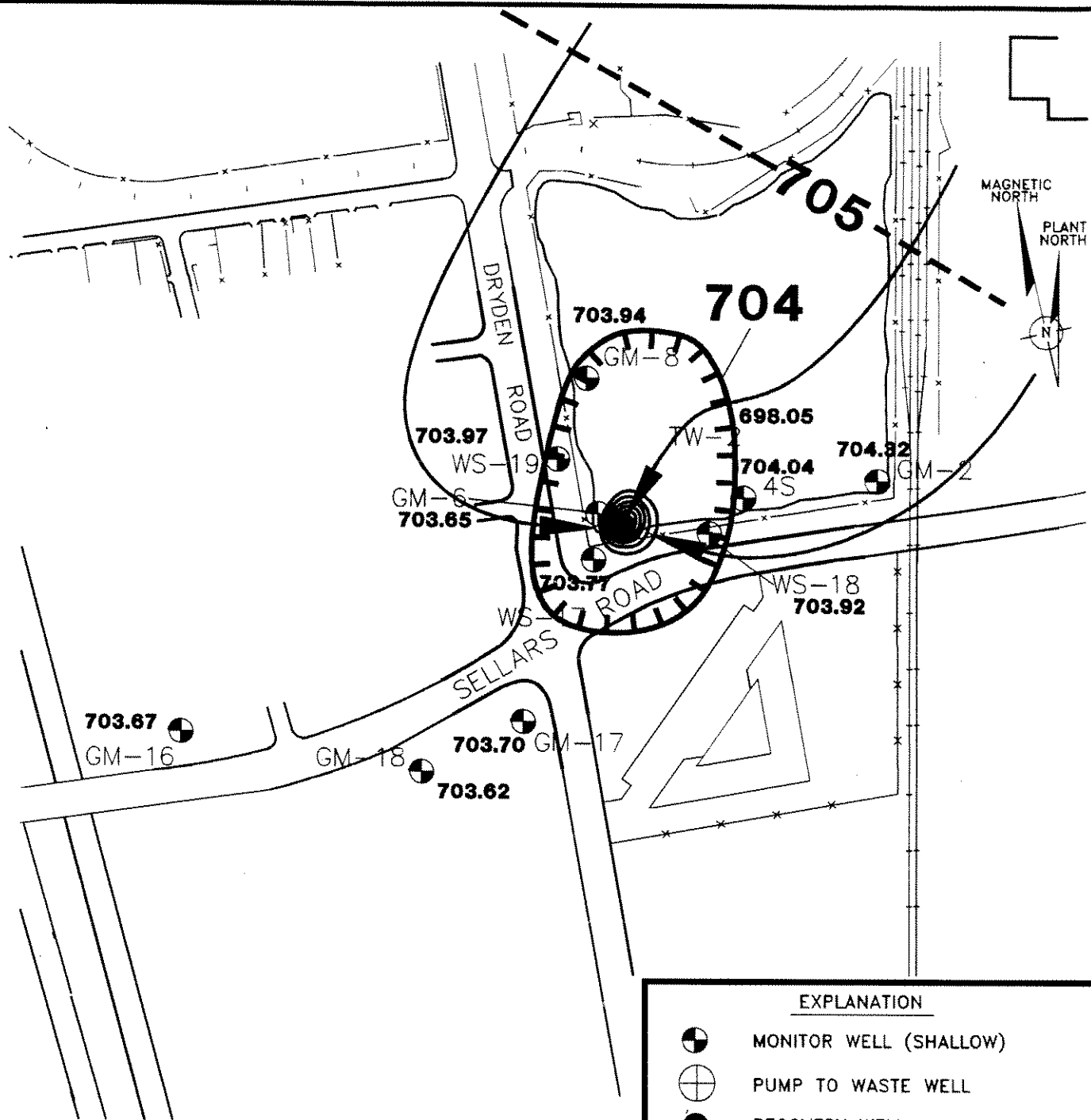
CHECKED: N.G.

DRAWING: L1-IM

FILE NO.: HARR-VN-B

PRJCT NO.: OH0408.001

DWG DATE: 16MAY94



EXPLANATION

- MONITOR WELL (SHALLOW)
- PUMP TO WASTE WELL
- RECOVERY WELL
- 703.62** GROUNDWATER ELEVATION (FEET MSL)
- 704-** GROUNDWATER CONTOUR (FEET MSL) DASHED WHERE INFERRED
- CONE OF DEPRESSION
- GROUNDWATER FLOW DIRECTION

GERAGHTY & MILLER, INC.
Environmental Services

WATER-TABLE SURFACE - SHALLOW
ON JANUARY 30, 1997,
CAPTURE ZONE MONITORING
DELPHI HARRISON THERMAL SYSTEMS,
MORAINE, OHIO

FIGURE

9

DRAFTER: RTS

APPROVED: N.G.

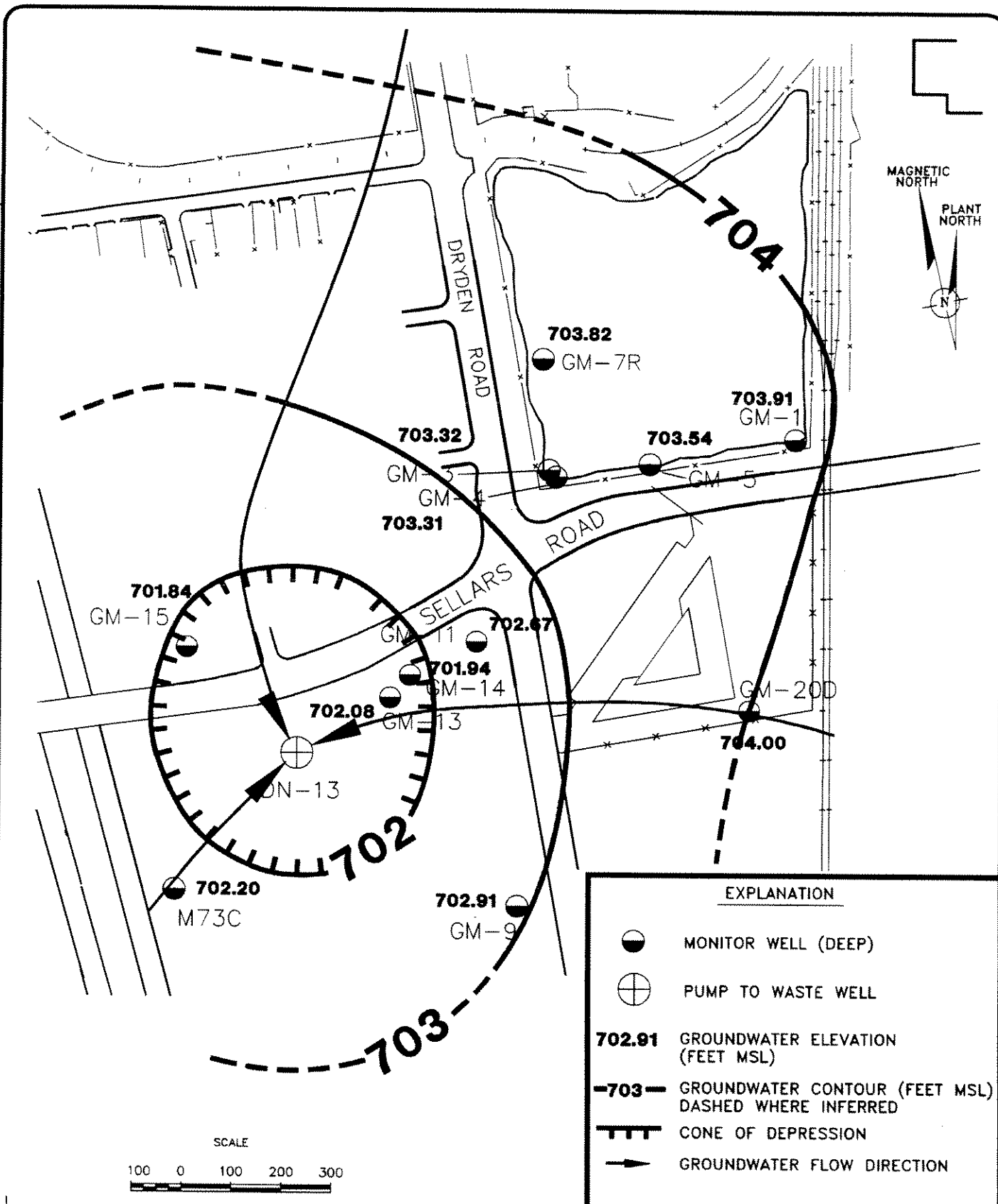
CHECKED: N.G.

DRAWING: LI-JM

FILE NO.: HARR-N-B

PRJCT NO.: OH0408.001

DWG DATE: 16MAY94



**GERAGHTY
& MILLER, INC.**
Environmental Services

**POTENTIOMETRIC SURFACE - DEEP
ON JANUARY 30, 1997,
CAPTURE ZONE MONITORING**
DELPHI HARRISON THERMAL SYSTEMS,
MORaine, OHIO

FIGURE

10