

FACPAC Contract Change Order

Supplemental Information Form (Ref# 63209)

Form Status: Saved

Tier 1 Project: New West Middle School

BG Number: 23-117

Status: Active

District: Hardin County (HB678) (231)

Phase: Project Initiation (View Checklist)

Contract: Geothermal Earthworks, 0231, Geothermal

Type: CM Bid Package

Proposed

Change Order Number 11
 Time Extension Required No
 Date Of Change Order 9/15/2025
 Change Order Amount To Date

Construction Contingency

Calculations below are project wide. Remaining negative Construction Contingency may require the submission of a revised BG1.

Current Approved Amount	\$2,890,000.00
Net Approved COs	\$0.00
Remaining After Approved COs	\$2,890,000.00
Net All COs	\$441,697.08
Remaining After All COs	\$2,448,302.92

This Requested Change Order Amount \$387,375.00

+/-

Change In A/E Fee This Change Order

+/-

Change In CM Fee This Change Order \$29,053.12

+/-

Remaining Construction Contingency \$2,448,302.92

Balance

Contract Change Requested By

Construction Manager; Subcontractor

Contract Change Reason Code

Expansion of Scope; Found Condition

Change Order Description And Justification

The contract price included \$15,300 feet of casing, 90 feet per bore according to the specifications, in which 30,795 feet had to be used to complete this work. Before this work started, this was discussed in both post-bid interview, as well as the pre-install meeting, in which it was agreed upon to proceed with a \$25/ft unit price for casing.

Cost Benefit To Owner

N/A

Contract unit prices have been utilized Yes
to support the cost associated with this
change order.

Detailed Cost Breakdown

Contract unit prices have not been utilized, provide a detailed cost breakdown which
separates labor, material, profit and overhead.

Detail Item	Amount	Percent of Total
Labor		0.00%
Materials	\$387,375.00	100.00%
Profit and Overhead		0.00%
Bond Insurance		0.00%
Cost Breakdown Total:	\$387,375.00	
Cost for this Change Order supported by an alternate bid or competitive price quote	No	
Explain Why		

Change Order Supplemental Information Form Signature Page (Online Form Ref# 63209)

Architect

Date

Justin Van Zile

10/15/2025

Construction Manager

Date

Finance Officer

Date

Local Board of Education Designee

Date

Wehr Constructors Inc - Louisville
OFFICE AND YARD
2517 Plantside Dr
Louisville, KY 40299



PHONE: 502-491-9250
FAX: 502-493-8653

GENERAL CONTRACTORS
ADDRESS CORRESPONDENCE TO:
2517 Plantside Dr
Louisville, KY 40299

CHANGE ORDER REQUEST

Date: 9/15/2025

Project Name: West Hardin Middle School

To: Hardin County Board of Education
65 A W Jenkins Rd.
Elizabethtown, KY 42701

Architect Project No. 202280

Attn: Shelee Clark

Wehr Project No. 24-049

Re: Wehr Request No. **Additional Geothermal Casing**

DESCRIPTION OF CHANGE: **Additional Geothermal Casing**

For the above change, we would add the amount of **\$416,428.12** to the contract.

Days schedule delayed: 0

<i>Item</i>	<i>Subcontractor</i>	<i>Subtotal</i>
1	Geothermal Earthworks	\$387,375
2	Construction Manager Fee	\$29,053.12

Subtotal \$416,428.12

WEHR CONSTRUCTORS, INC.

By Justin Van Zile, Project Manager

We have reviewed the above Change Order Request and it is ☐ Approved; ☐ Rejected; ☐ to be Revised & Resubmitted.

Architect's Signature

Firm Name

Date

We have reviewed the above Change Order Request and it is ☐ Approved; ☐ Rejected; ☐ to be Revised & Resubmitted.

Owner's Signature

Firm Name

Date



AIA® Document G731™ – 2019

Change Order, Construction Manager as Adviser Edition

PROJECT: *(name and address)*

West Hardin Middle School
Cecila, KY 42724

OWNER: *(name and address)*

Hardin County Schools
65 W A Jenkins Rd., Elizabethtown, KY
42701

CONTRACTOR: *(name and address)*

Geothermal Earthworks Inc.
485 Hammett Hill Rd., Bowling Green,
KY 42101

CONTRACT INFORMATION:

Contract For: General Construction
Date: September 26, 2024

ARCHITECT: *(name and address)*

JRA Architects

CHANGE ORDER INFORMATION:

Change Order Number: 011
Date: 7/10/2025

CONSTRUCTION MANAGER: *(name and address)*

Wehr Constructors

THE CONTRACT IS CHANGED AS FOLLOWS:

(Insert a detailed description of the change and, if applicable, attach or reference specific exhibits. Also include agreed upon adjustments attributable to executed Construction Change Directives.)

Per the Standard Form of Agreement Between Owner, and Contractor, Construction Manager (AIA Document 132 - 2009 KDE) dated 9/26/2024, section 4.2.3 specifies the unit price of well casing at \$25.00 per linear foot.

A total of 30,795 feet of casing was installed. The contract price included 15,300 feet of casing (90 feet per bore) resulting in an average of 15,495 feet.

15,495 additional casing feet * \$25 per foot = \$387,375.00 change order.

The original Contract Sum was

\$ 2,004,842.90

Net change by previously authorized Change Orders

\$ 0.00

The Contract Sum prior to this Change Order was

\$ 2,004,842.90

The Contract Sum will be increased by this Change Order in the amount of

\$ 387,375.00

The new Contract Sum including this Change Order will be

\$ 2,392,217.90

The Contract Time will be increased by Zero (0) days.

The Contractor's Work shall be substantially complete on

NOTE: This Change Order does not include adjustments to the Contract Sum or Guaranteed Maximum Price, or the Contract Time, that have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONSTRUCTION MANAGER, CONTRACTOR, AND OWNER.

JRA Architects

ARCHITECT *(Firm name)*

SIGNATURE

PRINTED NAME AND TITLE

DATE:

Geothermal Earthworks Inc.

CONTRACTOR *(Firm name)*

Wehr Constructors

CONSTRUCTION MANAGER *(Firm name)*

SIGNATURE

PRINTED NAME AND TITLE

DATE:

Hardin County Schools

OWNER *(Firm name)*

Tucker Cross

SIGNATURE

Tucker Cross, Vice President

PRINTED NAME AND TITLE

7/10/2025

DATE:

SIGNATURE

PRINTED NAME AND TITLE

DATE:

West Hardin Middle School

Trade Package 23.1 Geothermal Post Bid Interview

Date 8/23/24

Trade Package 23.1 Geothermal

Attendees:

Contractor Geothermal Earthworks

1. Brad Cross, Tucker Cross

P & P Bond Price Included Yes

2. Brandon Boyer

Bid Bond Included Yes

3. Justin Van Zile

Alternates 1- 9 Review Yes

4. Andrew Coomes

Addendum 1-4 Review Yes

5. Jeremy Miller

Lead Time Issues N/A

Drawings/Spec Review Yes

Bid Package Review Yes

Post Bid Checklist Review Yes

Schedule Review Yes

Current Workload _____

Comments

\$207,158.50 DPO

6-7 drills onsite

Temporary sonic steel casing will be used

Removing all spoils from site

8" main stubbed up into building

Fill and purge system included, no treatment

1 storage trailer on site

Temporary sonic steel casing will be used at a rate of \$25.00 per linear foot.

Earthworks' proposal includes 90 feet of temporary sonic casing per well (15,300 feet total)
equating to a casing allowance of \$382,500.00.

Proposal includes \$74,405.45 for bonding expense and Earthworks' can provide a dollar-for-dollar
reduction in the proposed price if bonding requirements are dropped.

8/26/2024 8:45 AM

West Hardin Middle School
Trade Package 23.1 Geothermal Post Bid Interview

Bid Day

Base Bid	\$	<u>\$2,200,275.45</u>		
Alternate #1	\$	<u></u>	Alternate #4	\$ <u></u>
Alternate #2	\$	<u></u>	Alternate #5	\$ <u></u>
Alternate #3	\$	<u></u>	Alternate #6	\$ <u></u>
Post Bid Impact	\$	<u></u>	Sales Tax Included	<u>No</u>
BP Contract Amount	\$	<u>2,200,275.45</u>		

Subcontractor Signature Tucker Cross

Subcontractor Signature Bradley Cross

Wehr Project Manager

Wehr Project Manager

Wehr Project Engineer

Wehr Superintendent

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A1 03/03/25	West Hardin Middle School A1 02/05/25	West Hardin Middle School A2 03/03/25	West Hardin Middle School A2 02/05/25	West Hardin Middle School A3 03/03/25
Driller:	Sheep	Larry Fuson	Sheep	Larry Fuson	Sheep
Rig #	Rig #2	Rig #8	Rig #2	Rig #8	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	7 7/8"	8"	7 7/8"	8"
Bottom Hole Bore Diameter	4 1/8"	4 7/8"	4 1/8"	4 7/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	100	400	100	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-230 limestone 230-400 shell water zone at 235	0'-37 Clay 37-93 cracked up limestone 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125-126 void216-130 Solid rock 130-136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid rock	180-230 limestone 230-400 shell with water zone at 235	0'-37 Clay 37-93 cracked up limestone Solid at 93 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125-126 void216-130 Solid rock 130-136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid rock	180-230 limestone 230-400 shell water zone at 235
Loop Type, Diameter & Length:	1 1/4"	1"810'DR11	1 1/4"	1"DR11	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A3 02/05/25	West Hardin Middle School A4 03/03/25	West Hardin Middle School A4 02/05/25	West Hardin Middle School A5 03/04/25	West Hardin Middle School A5 02/05/25
Driller:	Larry Fuson	Sheep	Larry Fuson	Sheep	Larry Fuson
Rig #	Rig #8	Rig #2	Rig #8	Rig #2	Rig #8
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	7 7/8"	8"	7 7/8"	8"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 1/8"	4 7/8"	4 1/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	100	400	100	400	150
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-37 Clay. 37-44 lime. 44-45 void 45-49 Solid. 49-50 void 50-71 Solid 71-72 void 72-80 Solid 80-81 void 81-93 solid 93-94 void 94-100 solid 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125-126 void216-130 Solid rock 130-136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid roack	230-400 limestone 230-400 shell with water zone at 235	0-37 Clay. 37-44 lime. 44-45 void 45-49 Solid. 49-50 void 50-71 Solid 71-72 void 72-80 Solid 80-81 void 81-93 solid 93-94 void 94-100 solid 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125-126 void216-130 Solid rock 130-136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid rock	180-230 limestone 230-400 shell water zone at 235	0-37 Clay 37-99 cracked up lime 99-133 cavern 133-164 solid 164-167 mud seam with water 167-175 broken rock 175-180 solid rock
Loop Type, Diameter & Length:	1"810'DR11	1 1/4"	1"810'DR11	1 1/4"	1"810'DR11
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A6 03/04/25	West Hardin Middle School A6 02/05/25	West Hardin Middle School A7 03/11/25	West Hardin Middle School A7 03/04/25	West Hardin Middle School A8 03/11/25
Driller:	Sheep	Larry Fuson	Larry Fuson	Sheep	Larry Fuson
Rig #	Rig #2	Rig #8	Rig #8	Rig #2	Rig #8
Drilling Method:	Air Rotary	Sonic	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	8"	7 7/8"	6"	8"	6"
Bottom Hole Bore Diameter	4 1/8"	4 7/8"	4 7/8"	4 1/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	400	180	400	180
Casing Set Depth:	185	185	180	180	180
Sub-Surfaces Strata / Water Flow	180-230 limestone 230-400 shell water zone 235	0-37 Clay 37-89 cracked up lime 89-98 void 98- 100 solid 100-110 cracked up rock 110-113 void 113-119 solid 119-125 void 125-130 solid 130-136 cracked up 136-164 limestone 164- 167 mudseam 167-180 broken up rock 180-185l lime	same as previous	180-230 limestone 230-400 shell with water zone at 235	set casing
Loop Type, Diameter & Length:	1 1/4"	1"810'DR11	1"810'DR9	1 1/4"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A8 03/05/25	West Hardin Middle School A9 03/11/25	West Hardin Middle School A9 03/05/25	West Hardin Middle School A10 03/11/25	West Hardin Middle School A10 03/05/25
Driller:	Sheep	Larry Fuson	Sheep	Larry Fuson	Sheep
Rig #	Rig #2	Rig #8	Rig #2	Rig #8	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 1/8"	4 7/8"	4 1/8"	4 7/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-230 limestone 230-400 shell water zone at 235	set casing	180-230 limestone 230-400 shell water zone at 235	set casing	180-230 limestone 230-400 shell water zone at 235
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1 1/4"	1"810'DR9	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A11 03/06/25	West Hardin Middle School A11 03/11/25	West Hardin Middle School A12 03/06/25	West Hardin Middle School A12 03/11/25	West Hardin Middle School A13 04/15/25
Driller:	Sheep	Larry Fuson	Sheep	Larry Fuson	Nik Cornett
Rig #	Rig #2	Rig #8	Rig #2	Rig #8	Rig #7
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Sonic
Casing Hammer Bore Diameter	8"	6"	8"	6"	6"
Bottom Hole Bore Diameter	4 1/8"	4 7/8"	4 1/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	set casing	180-245 limestone 245-400 shell	set casing	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1 1/4"	1"810'DR9	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A13 03/07/25	West Hardin Middle School A14 04/14/25	West Hardin Middle School A14 03/07/25	West Hardin Middle School A15 04/09/25	West Hardin Middle School A15 03/10/25
Driller:	Sheep	Nik Cornett	Sheep	Nik Cornett	Sheep
Rig #	Rig #2	Rig #7	Rig #2	Rig #7	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	7 7/8"	8"	7 7/8"	8"
Bottom Hole Bore Diameter	4 1/8"	6"	4 1/8"	6"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1 1/4"	1"	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A16 04/22/25	West Hardin Middle School A16 03/11/25	West Hardin Middle School A17 04/23/25	West Hardin Middle School A17 03/11/25	West Hardin Middle School A18 04/22/25
Driller:	Sheep	Larry Fuson	Sheep	Larry Fuson	Sheep
Rig #	Rig #2	Rig #8	Rig #2	Rig #8	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 3/4"	4 7/8"	4 3/4"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	set casing	180-245 limestone 245-400 shell	set casing	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1 1/4"	1"810'DR9	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A18 02/07/25	West Hardin Middle School A19 04/23/25	West Hardin Middle School A19 02/06/25	West Hardin Middle School A20 03/19/25	West Hardin Middle School A20 02/06/25
Driller:	Larry Fuson	Sheep	Larry Fuson	Sheep	Larry Fuson
Rig #	Rig #8	Rig #2	Rig #8	Rig #2	Rig #8
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	7 7/8"	8"	7 7/8"	8"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	4 3/4"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	Set 180' casing in predrilled hole	180-245 limestone 245-400 shell	Set 180" casing in predrilled hole	180-245 limestone 245-400 shell	Set 180' of casing in predrilled hole
Loop Type, Diameter & Length:	1"810'DR11	1 1/4"	1"810'DR11	1 1/4"	1"810'DR11
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A21 04/24/25	West Hardin Middle School A21 03/11/25	West Hardin Middle School A21 02/07/25	West Hardin Middle School A22 05/22/25	West Hardin Middle School A22 03/11/25
Driller:	Sheep	Larry Fuson	Sheep	Sheep	Larry Fuson
Rig #	Rig #2	Rig #8	Rig #2	Rig #2	Rig #8
Drilling Method:	Air Rotary	Sonic	Air Rotary	Air Rotary	Sonic
Casing Hammer Bore Diameter	8"	6"	8"	8"	6"
Bottom Hole Bore Diameter	4 3/4"	4 7/8"	4 7/8"	4 3/4"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 she'll 245-400 shell	set casing	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water on it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	180-245 limestone 245-400 shell	set casing
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1 1/4"	1 1/4"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A22 02/13/25	West Hardin Middle School A23 04/24/25	West Hardin Middle School A23 03/11/25	West Hardin Middle School A23 02/05/25	West Hardin Middle School A24 04/24/25
Driller:	Sheep	Sheep	Larry Fuson	Sheep	Sheep
Rig #	Rig #2	Rig #2	Rig #8	Rig #2	Rig #2
Drilling Method:	Air Rotary	Air Rotary	Sonic	Air Rotary	Air Rotary
Casing Hammer Bore Diameter	8"	8"	6"	8"	8"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	4 7/8"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	180-245 limestone 245-400 shell	set casing	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	180-245 limestone 246-400 shell
Loop Type, Diameter & Length:	1 1/4"	1 1/4"	1"810'DR9	1 1/4"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A24 03/11/25	West Hardin Middle School A24 02/04/25	West Hardin Middle School A25 04/24/25	West Hardin Middle School A25 04/09/25	West Hardin Middle School A25 02/04/25
Driller:	Larry Fuson	Sheep	Sheep	Nik Cornett	Sheep
Rig #	Rig #8	Rig #2	Rig #2	Rig #7	Rig #2
Drilling Method:	Sonic	Air Rotary	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	8"	8"	7 7/8"	8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 3/4"	6"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	400	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	set casing	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone
Loop Type, Diameter & Length:	1"810'DR9	1 1/4"	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A26 04/24/25	West Hardin Middle School A26 04/08/25	West Hardin Middle School A26 02/03/25	West Hardin Middle School A27 04/24/25	West Hardin Middle School A27 02/03/25
Driller:	Sheep	Nik Cornett	Sheep	Sheep	Sheep
Rig #	Rig #2	Rig #7	Rig #2	Rig #2	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Air Rotary	Air Rotary
Casing Hammer Bore Diameter	8"	7 7/8"	8"	8"	8"
Bottom Hole Bore Diameter	4 3/4"	6"	4 7/8"	4 3/4"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	180-245 limestone 245-400 shell	0-40 clay 40-45 limestone 45-60 mud seam 60-75 formation is fractured with water in it 75-125 limestone 125-135 mud seam 136-160 shell 160-170 mud seam 170-180 limestone
Loop Type, Diameter & Length:	1 1/4"	1"	1 1/4"	1 1/4"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School A27 02/06/25	West Hardin Middle School A28 04/25/25	West Hardin Middle School A28 04/07/25	West Hardin Middle School A29 04/25/25	West Hardin Middle School A29 02/05/25
Driller:	Larry Fuson	Sheep	Nik Cornett	Sheep	Larry Fuson
Rig #	Rig #8	Rig #2	Rig #7	Rig #2	Rig #8
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	7 7/8"	8"	6"	8"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	4 3/4"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	Setting casing behind another drill	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-33 Clay 33-40 broken up rock 40-52 brown sand 52-53 void 53-76 sandstone 76-78 mud seam 70-157 lime 157 hard fracture 160-165 solid 165-167 Fracture 167-180solid Set 180'
Loop Type, Diameter & Length:	1"810'DR11	1 1/4"	1"	1 1/4"	1"810'DR11
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.

Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School B1 04/16/25	West Hardin Middle School B1 04/17/25	West Hardin Middle School B1 03/19/25	West Hardin Middle School B2 04/17/25	West Hardin Middle School B2 03/11/25
Driller:	Sheep	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson
Rig #	Rig #2	Rig #8	Rig #8	Rig #8	Rig #8
Drilling Method:	Air Rotary	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	8"	7"	6"	7"	6"
Bottom Hole Bore Diameter	4 3/4"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	400	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	same	same	same	set casing
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1"810'DR9	1"810'DR9	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.

Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School B3 04/17/25	West Hardin Middle School B4 04/17/25	West Hardin Middle School B5 04/17/25	West Hardin Middle School B6 04/17/25	West Hardin Middle School B7 04/17/25
Driller:	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson
Rig #	Rig #8	Rig #8	Rig #8	Rig #8	Rig #8
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	7"	7"	7"	7"	7"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	400	400	400	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	same	same	same	same as others	same
Loop Type, Diameter & Length:	1"810'DR9	1"810'DR9	1"810'DR9	1"810'DR9	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School B8 04/17/25	West Hardin Middle School B9 05/05/25	West Hardin Middle School B25 05/14/25	West Hardin Middle School B26 05/12/25	West Hardin Middle School C1 04/16/25
Driller:	Larry Fuson	Sheep	Nik Cornett	Nik Cornett	Sheep
Rig #	Rig #8	Rig #2	Rig #7	Rig #7	Rig #2
Drilling Method:	Sonic	Air Rotary	Sonic	Sonic	Air Rotary
Casing Hammer Bore Diameter	7"	8"	6"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 1/4"	4 7/8"	4 7/8"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	same	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"810'DR9	1"	1"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Project Name:	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School
Bore Number:	C1	C2	C3	C3	C4
Date:	03/19/25	03/11/25	05/05/25	05/01/25	05/06/25
Driller:	Larry Fuson	Larry Fuson	Sheep	Larry Fuson	Sheep
Rig #	Rig #8	Rig #8	Rig #2	Rig #8	Rig #2
Drilling Method:	Sonic	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 1/4"	4 7/8"	4 1/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	same	set casing	180-245 limestone 245-400 shell	same	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"810'DR9	1"810'DR9	1"	1"810'DR9	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.

Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School C4 04/30/25	West Hardin Middle School C5 05/06/25	West Hardin Middle School C6 05/06/25	West Hardin Middle School C6 04/29/25	West Hardin Middle School C7 05/06/25
Driller:	Larry Fuson	Sheep	Sheep	Larry Fuson	Sheep
Rig #	Rig #8	Rig #2	Rig #2	Rig #8	Rig #2
Drilling Method:	Sonic	Air Rotary	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	8"	8"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 1/4"	4 1/4"	4 7/8"	4 1/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	same	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell	same	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"810'DR9	1"	1"	1"810'DR9	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.

Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School C7 04/29/25	West Hardin Middle School C7 04/29/25	West Hardin Middle School C8 05/06/25	West Hardin Middle School C8 04/28/25	West Hardin Middle School C9 05/07/25
Driller:	Larry Fuson	Larry Fuson	Sheep	Larry Fuson	Sheep
Rig #	Rig #8	Rig #8	Rig #2	Rig #8	Rig #2
Drilling Method:	Sonic	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 1/4"	4 7/8"	4 1/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	400	185	400
Casing Set Depth:	180	180	185	185	180
Sub-Surfaces Strata / Water Flow	same	same	180-245 limestone 245-400 shell	same	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"810'DR9	1"810'DR9	1"	1"810'DR9	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School C9 04/24/25	West Hardin Middle School C25 05/15/25	West Hardin Middle School C26 05/15/25	West Hardin Middle School D1 04/14/25	West Hardin Middle School D1 03/19/25
Driller:	Larry Fuson	Nik Cornett	Nik Cornett	Sheep	Larry Fuson
Rig #	Rig #8	Rig #7	Rig #7	Rig #2	Rig #8
Drilling Method:	Sonic	Sonic	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	6"	6"	8"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 3/4"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	same	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	same
Loop Type, Diameter & Length:	1"810'DR9	1"	1"	1 1/4"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School D2 04/14/25	West Hardin Middle School D2 03/11/25	West Hardin Middle School D3 04/14/25	West Hardin Middle School D3 03/19/25	West Hardin Middle School D4 04/14/25
Driller:	Sheep	Larry Fuson	Sheep	Nik Cornett	Sheep
Rig #	Rig #2	Rig #8	Rig #2	Rig #7	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 3/4"	4 7/8"	4 3/4"	4 7/8"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	set casing	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School D4 03/19/25	West Hardin Middle School D5 04/14/25	West Hardin Middle School D5 03/17/25	West Hardin Middle School D6 04/14/25	West Hardin Middle School D6 03/13/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Sheep	Nik Cornett
Rig #	Rig #7	Rig #2	Rig #7	Rig #2	Rig #7
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	8"	7 7/8"	8"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	5 3/4"	4 3/4"	6"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1 1/4"	1"	1 1/4"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School D6 02/10/25	West Hardin Middle School D7 04/14/25	West Hardin Middle School D7 03/12/25	West Hardin Middle School D7 02/17/25	West Hardin Middle School D8 04/14/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Nik Cornett	Sheep
Rig #	Rig #7	Rig #2	Rig #7	Rig #7	Rig #2
Drilling Method:	Sonic	Air Rotary	Sonic	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	8"	6"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	4 7/8"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	402	400	180	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 red clay 40-42 limestone 42-70 mud seam 70-140 limestone 140-142 mud seam 142-175 limestone 175-177 broken shale 177-400 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 100- 170 mud seam 170-178 broken shale 178-180 hard limestone	0-40 clay overburden 40-45 limestone 45-70 mud seam 70- 140 limestone 140-143 mud seam 143-175 busted shale 175-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"810'DR9	1 1/4"	1"	1"810'DR9	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School D8 03/11/25	West Hardin Middle School D8 02/18/25	West Hardin Middle School D9 04/14/25	West Hardin Middle School D9 03/07/25	West Hardin Middle School D10 03/14/25
Driller:	Nik Cornett	Nik Cornett	Sheep	Nik Cornett	Sheep
Rig #	Rig #7	Rig #7	Rig #2	Rig #7	Rig #2
Drilling Method:	Sonic	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	6"	8"	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 3/4"	4 7/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	400	190	400
Casing Set Depth:	180	180	180	190	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-100 limestone 140- 175 mud seam 175- 178 broken shale 178-180 hard limestone	0-40 overburden 40-70 mud seam 70-100 limestone 100-140 140-143 mud seam 143-160 limestone 160-175 broken shale 175-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-185 mud seam and broken shale	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"	1"	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School D10 03/06/25	West Hardin Middle School D11 03/14/25	West Hardin Middle School D11 03/06/25	West Hardin Middle School D12 03/17/25	West Hardin Middle School D12 03/05/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Sheep	Nik Cornett
Rig #	Rig #7	Rig #2	Rig #7	Rig #2	Rig #7
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	6"	6"	6"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 1/8"	4 7/8"	4 1/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1 1/4"	1"	1 1/4"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School D13 03/17/25	West Hardin Middle School D13 03/04/25	West Hardin Middle School D14 03/18/25	West Hardin Middle School D14 03/03/25	West Hardin Middle School D15 03/18/25
Driller:	Sheep	Nik Cornett	Sheep	Nik Cornett	Sheep
Rig #	Rig #2	Rig #7	Rig #2	Rig #7	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	6"	6"	6"	6"
Bottom Hole Bore Diameter	4 1/8"	4 7/8"	4 1/8"	4 7/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1 1/4"	1"	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School D15 03/03/25	West Hardin Middle School D16 03/18/25	West Hardin Middle School D17 03/18/25	West Hardin Middle School D17 02/24/25	West Hardin Middle School D18 04/15/25
Driller:	Nik Cornett	Sheep	Sheep	Nik Cornett	Sheep
Rig #	Rig #7	Rig #2	Rig #2	Rig #7	Rig #2
Drilling Method:	Sonic	Air Rotary	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	6"	6"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 1/8"	4 1/8"	4 7/8"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"	1 1/4"	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.

Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School D18 02/25/25	West Hardin Middle School D18 02/24/25	West Hardin Middle School D19 04/15/25	West Hardin Middle School D20 04/15/25	West Hardin Middle School D21 04/15/25
Driller:	Nik Cornett	Nik Cornett	Sheep	Sheep	Sheep
Rig #	Rig #7	Rig #7	Rig #2	Rig #2	Rig #2
Drilling Method:	Sonic	Sonic	Air Rotary	Air Rotary	Air Rotary
Casing Hammer Bore Diameter	6"	6"	8"	8"	8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 3/4"	4 3/4"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	400	400	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"	1"	1 1/4"	1 1/4"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School D22 04/15/25	West Hardin Middle School D22 03/20/25	West Hardin Middle School D23 04/15/25	West Hardin Middle School D23 03/24/25	West Hardin Middle School D24 04/15/25
Driller:	Sheep	Nik Cornett	Sheep	Nik Cornett	Sheep
Rig #	Rig #2	Rig #7	Rig #2	Rig #7	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 3/4"	4 7/8"	4 3/4"	4 7/8"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1 1/4"	1"	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School D24 03/25/25	West Hardin Middle School D25 03/26/25	West Hardin Middle School D26 04/28/25	West Hardin Middle School D26 03/27/25	West Hardin Middle School D27 04/28/25
Driller:	Nik Cornett	Nik Cornett	Sheep	Nik Cornett	Sheep
Rig #	Rig #7	Rig #7	Rig #2	Rig #7	Rig #2
Drilling Method:	Sonic	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	7 7/8"	8"	7 7/8"	8"
Bottom Hole Bore Diameter	4 7/8"	5 3/4"	4 3/4"	6"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"	1"	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School D27 04/01/25	West Hardin Middle School D28 04/29/25	West Hardin Middle School D28 04/01/25	West Hardin Middle School D29 04/29/25	West Hardin Middle School D29 04/02/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Sheep	Nik Cornett
Rig #	Rig #7	Rig #2	Rig #7	Rig #2	Rig #7
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	8"	6"	8"	6"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	4 3/4"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1 1/4"	1"	1 1/4"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School E1 04/16/25	West Hardin Middle School E1 03/19/25	West Hardin Middle School E1 03/19/25	West Hardin Middle School E2 04/16/25	West Hardin Middle School E2 03/11/25
Driller:	Sheep	Larry Fuson	Larry Fuson	Sheep	Larry Fuson
Rig #	Rig #2	Rig #8	Rig #8	Rig #2	Rig #8
Drilling Method:	Air Rotary	Sonic	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	8"	6"	6"	8"	6"
Bottom Hole Bore Diameter	4 3/4"	4 7/8"	4 7/8"	4 3/4"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	same	same	180-245 limestone 245-400 shell	set casing
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1"810'DR9	1 1/4"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School E3 05/01/25	West Hardin Middle School E3 04/15/25	West Hardin Middle School E4 05/01/25	West Hardin Middle School E4 04/16/25	West Hardin Middle School E5 05/01/25
Driller:	Sheep	Nik Cornett	Sheep	Nik Cornett	Sheep
Rig #	Rig #2	Rig #7	Rig #2	Rig #7	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 1/4"	4 7/8"	4 1/4"	4 7/8"	4 1/4"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"	1"	1"	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School E5 04/21/25	West Hardin Middle School E8 05/19/25	West Hardin Middle School E9 05/19/25	West Hardin Middle School E20 04/28/25	West Hardin Middle School E24 05/19/25
Driller:	Nik Cornett	Larry Fuson	Larry Fuson	Nik Cornett	Nik Cornett
Rig #	Rig #7	Rig #8	Rig #8	Rig #7	Rig #7
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	6"	6"	6"	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	6"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	same	same	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1"810'DR9	1"810'DR9	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School E25 05/19/25	West Hardin Middle School E26 05/19/25	West Hardin Middle School E27 05/19/25	West Hardin Middle School E28 05/19/25	West Hardin Middle School E29 05/07/25
Driller:	Nik Cornett	Nik Cornett	Nik Cornett	Nik Cornett	Sheep
Rig #	Rig #7	Rig #7	Rig #7	Rig #7	Rig #2
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	6"	6"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 1/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"	1"	1"	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School E29 04/28/25	West Hardin Middle School F1 04/16/25	West Hardin Middle School F1 03/19/25	West Hardin Middle School F14 05/08/25	West Hardin Middle School F15 05/07/25
Driller:	Nik Cornett	Sheep	Larry Fuson	Nik Cornett	Nik Cornett
Rig #	Rig #7	Rig #2	Rig #8	Rig #7	Rig #7
Drilling Method:	Sonic	Air Rotary	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	6"	8"	6"	7 7/8"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	6"	6"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	same	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1 1/4"	1"810'DR9	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School F16 05/08/25	West Hardin Middle School F16 05/06/25	West Hardin Middle School F17 05/08/25	West Hardin Middle School F17 05/06/25	West Hardin Middle School F18 05/09/25
Driller:	Sheep	Nik Cornett	Sheep	Nik Cornett	Sheep
Rig #	Rig #2	Rig #7	Rig #2	Rig #7	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 1/4"	4 7/8"	4 1/4"	4 7/8"	4 1/4"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"	1"	1"	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School F18 05/06/25	West Hardin Middle School F19 05/05/25	West Hardin Middle School F20 05/05/25	West Hardin Middle School F21 04/29/25	West Hardin Middle School F22 05/12/25
Driller:	Nik Cornett	Nik Cornett	Nik Cornett	Nik Cornett	Sheep
Rig #	Rig #7	Rig #7	Rig #7	Rig #7	Rig #2
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	6"	6"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 1/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"	1"	1"	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name:	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School
Bore Number:	F22	F23	F23	F24	F24
Date:	04/29/25	05/12/25	04/28/25	05/12/25	04/28/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Sheep	Nik Cornett
Rig #	Rig #7	Rig #2	Rig #7	Rig #2	Rig #7
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	8"	6"	8"	6"
Bottom Hole Bore Diameter	4 7/8"	4 1/4"	4 7/8"	4 1/4"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 246-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1"	1"	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School F25 05/13/25	West Hardin Middle School F25 04/25/25	West Hardin Middle School F26 05/14/25	West Hardin Middle School F26 04/24/25	West Hardin Middle School F27 05/15/25
Driller:	Sheep	Nik Cornett	Sheep	Nik Cornett	Sheep
Rig #	Rig #2	Rig #7	Rig #2	Rig #7	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 1/4"	4 7/8"	4 1/4"	4 7/8"	4 1/4"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 246-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"	1"	1"	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of May 20, 2025

Project Name: Bore Number: Date:	West Hardin Middle School F27 04/24/25	West Hardin Middle School F28 05/15/25	West Hardin Middle School F28 04/22/25	West Hardin Middle School F29 05/15/25	West Hardin Middle School F29 04/21/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Sheep	Nik Cornett
Rig #	Rig #7	Rig #2	Rig #7	Rig #2	Rig #7
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	8"	6"	8"	6"
Bottom Hole Bore Diameter	4 7/8"	4 1/4"	4 7/8"	4 1/4"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1"	1"	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name:	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School
Bore Number:	A1	A1	A2	A2	A3
Date:	03/03/25	02/05/25	03/03/25	02/05/25	03/03/25
Driller:	Sheep	Larry Fuson	Sheep	Larry Fuson	Sheep
Rig #	Rig #2	Rig #8	Rig #2	Rig #8	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	7 7/8"	8"	7 7/8"	8"
Bottom Hole Bore Diameter	4 1/8"	4 7/8"	4 1/8"	4 7/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	100	400	100	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-230 limestone 230-400 shell water zone at 235	0'-37 Clay 37-93 cracked up limestone 93-110 Solid 111-113 Cracked up rock 113-125 solid rock125-126 void216-130 Solid rock130-136 cracked up rock136-164 solid rock164-167 mud seam with water167-175 broken rock175-180 solid roack	180-230 limestone 230-400 shell with water zone at 235	0'-37 Clay 37-93 cracked up limestone Solid at 93 93-110 Solid 111-113 Cracked up rock 113-125 solid rock125-126 void216-130 Solid rock130-136 cracked up rock136-164 solid rock164-167 mud seam with water167-175 broken rock175-180 solid rock	180-230 limestone 230-400 shell water zone at 235
Loop Type, Diameter & Length:	1 1/4"	1"810'DR11	1 1/4"	1"DR11	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name:	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School
Bore Number:	A3	A4	A4	A5	A5
Date:	02/05/25	03/03/25	02/05/25	03/04/25	02/05/25
Driller:	Larry Fuson	Sheep	Larry Fuson	Sheep	Larry Fuson
Rig #	Rig #8	Rig #2	Rig #8	Rig #2	Rig #8
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	7 7/8"	8"	7 7/8"	8"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 1/8"	4 7/8"	4 1/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	100	400	100	400	150
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-37 Clay. 37-44 lime. 44-45 void 45-49 Solid. 49-50 void 50-71 Solid 71-72 void 72-80 Solid 80-81 void 81-93 solid 93-94 void94-100 solid93-110 Solid 111-113 Cracked up rock 113-125 solid rock125-126 void216-130 Solid rock130-136 cracked up rock136-164 solid rock164-167 mud seam with water167-175 broken rock175-180 solid rock	230-400 limestone 230-400 shell with water zone at 235	0-37 Clay. 37-44 lime. 44-45 void 45-49 Solid. 49-50 void 50-71 Solid 71-72 void 72-80 Solid 80-81 void 81-93 solid93-94 void94-100 solid93-110 Solid 111-113 Cracked up rock 113-125 solid rock125-126 void216-130 Solid rock130-136 cracked up rock136-164 solid rock164-167 mud seam with water167-175 broken rock175-180 solid rock	180-230 limestone 230-400 shell water zone at 235	0-37 Clay 37-99 cracked up lime 99-133 cavern 133-164 solid 164-167 mud seam with water167-175 broken rock175- 180 solid rock
Loop Type, Diameter & Length:	1"810'DR11	1 1/4"	1"810'DR11	1 1/4"	1"810'DR11
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School A6 03/04/25	West Hardin Middle School A6 02/05/25	West Hardin Middle School A7 03/11/25	West Hardin Middle School A7 03/04/25	West Hardin Middle School A8 03/11/25
Driller:	Sheep	Larry Fuson	Larry Fuson	Sheep	Larry Fuson
Rig #	Rig #2	Rig #8	Rig #8	Rig #2	Rig #8
Drilling Method:	Air Rotary	Sonic	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	8"	7 7/8"	6"	8"	6"
Bottom Hole Bore Diameter	4 1/8"	4 7/8"	4 7/8"	4 1/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	400	180	400	180
Casing Set Depth:	185	185	180	180	180
Sub-Surfaces Strata / Water Flow	180-230 limestone 230-400 shell water zone 235	0-37 Clay 37-89 cracked up lime 89-98 void 98- 100 solid 100-110 cracked up rock 110-113 void 113-119 solid 119-125 void 125-130 solid 130-136 cracked up 136-164 limestone 164- 167 mudseam 167-180 broken up rock 180-185I lime	same as previous	180-230 limestone 230-400 shell with water zone at 235	set casing
Loop Type, Diameter & Length:	1 1/4"	1"810'DR11	1"810'DR9	1 1/4"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School A8 03/05/25	West Hardin Middle School A9 03/11/25	West Hardin Middle School A9 03/05/25	West Hardin Middle School A10 03/11/25	West Hardin Middle School A10 03/05/25
Driller:	Sheep	Larry Fuson	Sheep	Larry Fuson	Sheep
Rig #	Rig #2	Rig #8	Rig #2	Rig #8	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 1/8"	4 7/8"	4 1/8"	4 7/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-230 limestone 230-400 shell water zone at 235	set casing	180-230 limestone 230-400 shell water zone at 235	set casing	180-230 limestone 230-400 shell water zone at 235
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1 1/4"	1"810'DR9	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School A11 03/06/25	West Hardin Middle School A11 03/11/25	West Hardin Middle School A12 03/06/25	West Hardin Middle School A12 03/11/25	West Hardin Middle School A13 04/15/25
Driller:	Sheep	Larry Fuson	Sheep	Larry Fuson	Nik Cornett
Rig #	Rig #2	Rig #8	Rig #2	Rig #8	Rig #7
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Sonic
Casing Hammer Bore Diameter	8"	6"	8"	6"	6"
Bottom Hole Bore Diameter	4 1/8"	4 7/8"	4 1/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	set casing	180-245 limestone 245-400 shell	set casing	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1 1/4"	1"810'DR9	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School A13 03/07/25	West Hardin Middle School A14 04/14/25	West Hardin Middle School A14 03/07/25	West Hardin Middle School A15 04/09/25	West Hardin Middle School A15 03/10/25
Driller:	Sheep	Nik Cornett	Sheep	Nik Cornett	Sheep
Rig #	Rig #2	Rig #7	Rig #2	Rig #7	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	7 7/8"	8"	7 7/8"	8"
Bottom Hole Bore Diameter	4 1/8"	6"	4 1/8"	6"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1 1/4"	1"	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School A16 03/11/25	West Hardin Middle School A17 03/11/25	West Hardin Middle School A18 02/07/25	West Hardin Middle School A19 02/06/25	West Hardin Middle School A20 02/06/25
Driller:	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson
Rig #	Rig #8	Rig #8	Rig #8	Rig #8	Rig #8
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	6"	6"	7 7/8"	7 7/8"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	set casing	set casing	Set 180' casing in predrilled hole	Set 180" casing in predrilled hole	Set 180' of casing in predrilled hole
Loop Type, Diameter & Length:	1"810'DR9	1"810'DR9	1"810'DR11	1"810'DR11	1"810'DR11
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School A21 03/11/25	West Hardin Middle School A21 02/07/25	West Hardin Middle School A22 03/11/25	West Hardin Middle School A22 02/13/25	West Hardin Middle School A23 03/11/25
Driller:	Larry Fuson	Sheep	Larry Fuson	Sheep	Larry Fuson
Rig #	Rig #8	Rig #2	Rig #8	Rig #2	Rig #8
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	8"	6"	8"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	set casing	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water on it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	set casing	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	set casing
Loop Type, Diameter & Length:	1"810'DR9	1 1/4"	1"810'DR9	1 1/4"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School A23 02/05/25	West Hardin Middle School A24 03/11/25	West Hardin Middle School A24 02/04/25	West Hardin Middle School A25 04/09/25	West Hardin Middle School A25 02/04/25
Driller:	Sheep	Larry Fuson	Sheep	Nik Cornett	Sheep
Rig #	Rig #2	Rig #8	Rig #2	Rig #7	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	6"	8"	7 7/8"	8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	6"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	set casing	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School A26 04/08/25	West Hardin Middle School A26 02/03/25	West Hardin Middle School A27 02/03/25	West Hardin Middle School A27 02/06/25	West Hardin Middle School A28 04/07/25
Driller:	Nik Cornett	Sheep	Sheep	Larry Fuson	Nik Cornett
Rig #	Rig #7	Rig #2	Rig #2	Rig #8	Rig #7
Drilling Method:	Sonic	Air Rotary	Air Rotary	Sonic	Sonic
Casing Hammer Bore Diameter	7 7/8"	8"	8"	7 7/8"	6"
Bottom Hole Bore Diameter	6"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	0-40 clay 40-45 limestone 45-60 mud seam 60-75 formation is fractured with water in it 75-125 limestone 125-135 mud seam 136-160 shell 160-170 mud seam 170-180 limestone	Setting casing behind another drill	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1 1/4"	1 1/4"	1"810'DR11	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School A29 02/05/25	West Hardin Middle School B1 04/16/25	West Hardin Middle School b1 04/17/25	West Hardin Middle School B1 03/19/25	West Hardin Middle School b2 04/17/25
Driller:	Larry Fuson	Sheep	Larry Fuson	Larry Fuson	Larry Fuson
Rig #	Rig #8	Rig #2	Rig #8	Rig #8	Rig #8
Drilling Method:	Sonic	Air Rotary	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	7 7/8"	8"	7"	6"	7"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-33 Clay 33-40 broken up rock 40-52 brown sand 52-53 void 53-76 sandstone 76-78 mud seam 70-157 lime 157 hard fracture 160-165 solid 165-167 Fracture 167-180solid Set 180'	180-245 limestone 245-400 shell	same	same	same
Loop Type, Diameter & Length:	1"810'DR11	1 1/4"	1"810'DR9	1"810'DR9	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School B2 03/11/25	West Hardin Middle School b3 04/17/25	West Hardin Middle School b4 04/17/25	West Hardin Middle School b5 04/17/25	West Hardin Middle School b6 04/17/25
Driller:	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson
Rig #	Rig #8	Rig #8	Rig #8	Rig #8	Rig #8
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	6"	7"	7"	7"	7"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	400	400	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	set casing	same	same	same	same as others
Loop Type, Diameter & Length:	1"810'DR9	1"810'DR9	1"810'DR9	1"810'DR9	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School b7 04/17/25	West Hardin Middle School b8 04/17/25	West Hardin Middle School C1 04/16/25	West Hardin Middle School C1 03/19/25	West Hardin Middle School C2 03/11/25
Driller:	Larry Fuson	Larry Fuson	Sheep	Larry Fuson	Larry Fuson
Rig #	Rig #8	Rig #8	Rig #2	Rig #8	Rig #8
Drilling Method:	Sonic	Sonic	Air Rotary	Sonic	Sonic
Casing Hammer Bore Diameter	7"	7"	8"	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 3/4"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	same	same	180-245 limestone 245-400 shell	same	set casing
Loop Type, Diameter & Length:	1"810'DR9	1"810'DR9	1 1/4"	1"810'DR9	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School D1 04/14/25	West Hardin Middle School D1 03/19/25	West Hardin Middle School D2 04/14/25	West Hardin Middle School D2 03/11/25	West Hardin Middle School D3 04/14/25
Driller:	Sheep	Larry Fuson	Sheep	Larry Fuson	Sheep
Rig #	Rig #2	Rig #8	Rig #2	Rig #8	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 3/4"	4 7/8"	4 3/4"	4 7/8"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	same	180-245 limestone 245-400 shell	set casing	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1 1/4"	1"810'DR9	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School D3 03/19/25	West Hardin Middle School D4 04/14/25	West Hardin Middle School D4 03/19/25	West Hardin Middle School D5 04/14/25	West Hardin Middle School D5 03/17/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Sheep	Nik Cornett
Rig #	Rig #7	Rig #2	Rig #7	Rig #2	Rig #7
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	8"	6"	8"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	4 3/4"	5 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1 1/4"	1"	1 1/4"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School D6 04/14/25	West Hardin Middle School D6 03/13/25	West Hardin Middle School D6 02/10/25	West Hardin Middle School D7 04/14/25	West Hardin Middle School D7 03/12/25
Driller:	Sheep	Nik Cornett	Nik Cornett	Sheep	Nik Cornett
Rig #	Rig #2	Rig #7	Rig #7	Rig #2	Rig #7
Drilling Method:	Air Rotary	Sonic	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	8"	7 7/8"	6"	8"	6"
Bottom Hole Bore Diameter	4 3/4"	6"	4 7/8"	4 3/4"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	402	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 red clay 40-42 limestone 42-70 mud seam 70-140 limestone 140-142 mud seam 142-175 limestone 175-177 broken shale 177-400 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 100- 170 mud seam 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1 1/4"	1"	1"810'DR9	1 1/4"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School D7 02/17/25	West Hardin Middle School D8 04/14/25	West Hardin Middle School D8 03/11/25	West Hardin Middle School D8 02/18/25	West Hardin Middle School D9 04/14/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Nik Cornett	Sheep
Rig #	Rig #7	Rig #2	Rig #7	Rig #7	Rig #2
Drilling Method:	Sonic	Air Rotary	Sonic	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	8"	6"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	4 7/8"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 clay overburden 40-45 limestone 45-70 mud seam 70-140 limestone 140-143 mud seam 143-175 busted shale 175-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-100 limestone 140- 175 mud seam 175- 178 broken shale 178-180 hard limestone	0-40 overburden 40-70 mud seam 70-100 limestone 100-140 140-143 mud seam 143-160 limestone 160-175 broken shale 175-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"810'DR9	1 1/4"	1"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name:	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School
Bore Number:	D9	D10	D10	D11	D11
Date:	03/07/25	03/14/25	03/06/25	03/14/25	03/06/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Sheep	Nik Cornett
Rig #	Rig #7	Rig #2	Rig #7	Rig #2	Rig #7
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	6"	6"	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 1/8"	4 7/8"	4 1/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	190	400	180	400	180
Casing Set Depth:	190	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-185 mud seam and broken shale	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1 1/4"	1"	1 1/4"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School D12 03/17/25	West Hardin Middle School D12 03/05/25	West Hardin Middle School D13 03/17/25	West Hardin Middle School D13 03/04/25	West Hardin Middle School D14 03/18/25
Driller:	Sheep	Nik Cornett	Sheep	Nik Cornett	Sheep
Rig #	Rig #2	Rig #7	Rig #2	Rig #7	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	7 7/8"	6"	6"	6"
Bottom Hole Bore Diameter	4 1/8"	4 7/8"	4 1/8"	4 7/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1 1/4"	1"	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School D14 03/03/25	West Hardin Middle School D15 03/18/25	West Hardin Middle School D15 03/03/25	West Hardin Middle School D16 03/18/25	West Hardin Middle School D17 03/18/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Sheep	Sheep
Rig #	Rig #7	Rig #2	Rig #7	Rig #2	Rig #2
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Air Rotary
Casing Hammer Bore Diameter	6"	6"	6"	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 1/8"	4 7/8"	4 1/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	400	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"	1 1/4"	1"	1 1/4"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School D17 02/24/25	West Hardin Middle School D18 04/15/25	West Hardin Middle School D18 02/25/25	West Hardin Middle School D18 02/24/25	West Hardin Middle School D19 04/15/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Nik Cornett	Sheep
Rig #	Rig #7	Rig #2	Rig #7	Rig #7	Rig #2
Drilling Method:	Sonic	Air Rotary	Sonic	Sonic	Air Rotary
Casing Hammer Bore Diameter	6"	8"	6"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	4 7/8"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"	1 1/4"	1"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

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Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School D20 04/15/25	West Hardin Middle School D21 04/15/25	West Hardin Middle School D22 04/15/25	West Hardin Middle School D22 03/20/25	West Hardin Middle School D23 04/15/25
Driller:	Sheep	Sheep	Sheep	Nik Cornett	Sheep
Rig #	Rig #2	Rig #2	Rig #2	Rig #7	Rig #2
Drilling Method:	Air Rotary	Air Rotary	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	8"	8"	6"	8"
Bottom Hole Bore Diameter	4 3/4"	4 3/4"	4 3/4"	4 7/8"	4 3/4"
Starting Footage	0	0	0	0	0
Ending Footage	400	400	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1 1/4"	1 1/4"	1 1/4"	1"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
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Project Name: Bore Number: Date:	West Hardin Middle School D23 03/24/25	West Hardin Middle School D24 04/15/25	West Hardin Middle School D24 03/25/25	West Hardin Middle School D25 03/26/25	West Hardin Middle School D26 03/27/25
Driller:	Nik Cornett	Sheep	Nik Cornett	Nik Cornett	Nik Cornett
Rig #	Rig #7	Rig #2	Rig #7	Rig #7	Rig #7
Drilling Method:	Sonic	Air Rotary	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	6"	8"	6"	7 7/8"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	5 3/4"	6"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1 1/4"	1"	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School D27 04/01/25	West Hardin Middle School D28 04/01/25	West Hardin Middle School D29 04/02/25	West Hardin Middle School E1 04/16/25	West Hardin Middle School E1 03/19/25
Driller:	Nik Cornett	Nik Cornett	Nik Cornett	Sheep	Larry Fuson
Rig #	Rig #7	Rig #7	Rig #7	Rig #2	Rig #8
Drilling Method:	Sonic	Sonic	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	6"	6"	8"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 3/4"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	same
Loop Type, Diameter & Length:	1"	1"	1"	1 1/4"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of April, 18 2025

Project Name: Bore Number: Date:	West Hardin Middle School E1 03/19/25	West Hardin Middle School E2 04/16/25	West Hardin Middle School E2 03/11/25	West Hardin Middle School E3 04/15/25	West Hardin Middle School E4 04/16/25
Driller:	Larry Fuson	Sheep	Larry Fuson	Nik Cornett	Nik Cornett
Rig #	Rig #8	Rig #2	Rig #8	Rig #7	Rig #7
Drilling Method:	Sonic	Air Rotary	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	6"	8"	6"	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 3/4"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	same	180-245 limestone 245-400 shell	set casing	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"810'DR9	1 1/4"	1"810'DR9	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.***Drill Logs: As of April, 18 2025***

Project Name:	West Hardin Middle School	West Hardin Middle School
Bore Number:	F1	F1
Date:	04/16/25	03/19/25
Driller:	Sheep	Larry Fuson
Rig #	Rig #2	Rig #8
Drilling Method:	Air Rotary	Sonic
Casing Hammer Bore Diameter	8"	6"
Bottom Hole Bore Diameter	4 3/4"	4 7/8"
Starting Footage	0	0
Ending Footage	400	180
Casing Set Depth:	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	same
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.

Drill Logs: As of March, 20 2024

Project Name:	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School
Bore Number:	A1	A1	A10	A10	A11
Date:	02/05/25	03/03/25	03/05/25	03/11/25	03/06/25
Driller:	Larry Fuson	Sheep	Sheep	Larry Fuson	Sheep
Rig #	Rig #8	Rig #2	Rig #2	Rig #8	Rig #2
Drilling Method:	Sonic	Air Rotary	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	7 7/8"	8"	8"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 1/8"	4 1/8"	4 7/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	100	400	400	180	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0'-37 Clay 37-93 cracked up limestone 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125- 126 void216-130 Solid rock 130- 136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid rock	180-230 limestone 230-400 shell water zone at 235	180-230 limestone 230-400 shell water zone at 235	set casing	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"810'DR11	1 1/4"	1 1/4"	1"810'DR9	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School A11 03/11/25	West Hardin Middle School A12 03/06/25	West Hardin Middle School A12 03/11/25	West Hardin Middle School A13 03/07/25	West Hardin Middle School A14 03/07/25
Driller:	Larry Fuson	Sheep	Larry Fuson	Sheep	Sheep
Rig #	Rig #8	Rig #2	Rig #8	Rig #2	Rig #2
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Air Rotary
Casing Hammer Bore Diameter	6"	8"	6"	8"	8"
Bottom Hole Bore Diameter	4 7/8"	4 1/8"	4 7/8"	4 1/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	400	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	set casing	180-245 limestone 245-400 shell	set casing	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1"810'DR9	1 1/4"	1"810'DR9	1 1/4"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School A15 03/10/25	West Hardin Middle School A16 03/11/25	West Hardin Middle School A17 03/11/25	West Hardin Middle School A18 02/07/25	West Hardin Middle School A19 02/06/25
Driller:	Sheep	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson
Rig #	Rig #2	Rig #8	Rig #8	Rig #8	Rig #8
Drilling Method:	Air Rotary	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	8"	6"	6"	7 7/8"	7 7/8"
Bottom Hole Bore Diameter	4 1/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	set casing	set casing	Set 180' casing in predrilled hole	Set 180" casing in predrilled hole
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1"810'DR9	1"810'DR11	1"810'DR11
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School A2 02/05/25	West Hardin Middle School A2 03/03/25	West Hardin Middle School A20 02/06/25	West Hardin Middle School A21 02/07/25	West Hardin Middle School A21 03/11/25
Driller:	Larry Fuson	Sheep	Larry Fuson	Sheep	Larry Fuson
Rig #	Rig #8	Rig #2	Rig #8	Rig #2	Rig #8
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	7 7/8"	8"	7 7/8"	8"	6"
Bottom Hole Bore Diameter	4 7/8"	4 1/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	100	400	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0'-37 Clay 37-93 cracked up limestone Solid at 93 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125- 126 void216-130 Solid rock 130- 136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid rock	180-230 limestone 230-400 shell with water zone at 235	Set 180' of casing in predrilled hole	0-40 clay 40-45 limestone 45- 60 mud seam 60-75 fractured with water on it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	set casing
Loop Type, Diameter & Length:	1"DR11	1 1/4"	1"810'DR11	1 1/4"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School A22 02/13/25	West Hardin Middle School A22 03/11/25	West Hardin Middle School A23 02/05/25	West Hardin Middle School A23 03/11/25	West Hardin Middle School A24 02/04/25
Driller:	Sheep	Larry Fuson	Sheep	Larry Fuson	Sheep
Rig #	Rig #2	Rig #8	Rig #2	Rig #8	Rig #2
Drilling Method:	Air Rotary	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	8"	6"	8"	6"	8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	set casing	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	set casing	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone
Loop Type, Diameter & Length:	1 1/4"	1"810'DR9	1 1/4"	1"810'DR9	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School A24 03/11/25	West Hardin Middle School A25 02/04/25	West Hardin Middle School A26 02/03/25	West Hardin Middle School A27 02/03/25	West Hardin Middle School A27 02/06/25
Driller:	Larry Fuson	Sheep	Sheep	Sheep	Larry Fuson
Rig #	Rig #8	Rig #2	Rig #2	Rig #2	Rig #8
Drilling Method:	Sonic	Air Rotary	Air Rotary	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	8"	8"	8"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	set casing	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	0-40 clay 40-45 limestone 45-60 mud seam 60-75 formation is fractured with water in it 75-125 limestone 125-135 mud seam 136-160 shell 160-170 mud seam 170-180 limestone	Setting casing behind another drill
Loop Type, Diameter & Length:	1"810'DR9	1 1/4"	1 1/4"	1 1/4"	1"810'DR11
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.

Drill Logs: As of March, 20 2024

Project Name:	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School	West Hardin Middle School
Bore Number:	A29	A3	A3	A4	A4
Date:	02/05/25	02/05/25	03/03/25	02/05/25	03/03/25
Driller:	Larry Fuson	Larry Fuson	Sheep	Larry Fuson	Sheep
Rig #	Rig #8	Rig #8	Rig #2	Rig #8	Rig #2
Drilling Method:	Sonic	Sonic	Air Rotary	Sonic	Air Rotary
Casing Hammer Bore Diameter	7 7/8"	7 7/8"	8"	7 7/8"	8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 1/8"	4 7/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	100	400	100	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-33 Clay 33-40 broken up rock 40-52 brown sand 52-53 void 53-76 sandstone 76-78 mud seam 70-157 lime 157 hard fracture 160-165 solid 165-167 Fracture 167-180solid Set 180'	0-37 Clay. 37-44 lime. 44-45 void 45-49 Solid. 49-50 void 50-71 Solid 71-72 void 72-80 Solid 80-81 void 81-93 solid 93-94 void 94-100 solid 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125-126 void216-130 Solid rock 130-136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid roack	180-230 limestone 230-400 shell water zone at 235	0-37 Clay. 37-44 lime. 44-45 void 45-49 Solid. 49-50 void 50-71 Solid 71-72 void 72-80 Solid 80-81 void 81-93 solid 93-94 void 94-100 solid 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125-126 void216-130 Solid rock 130-136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid rock	230-400 limestone 230-400 shell with water zone at 235
Loop Type, Diameter & Length:	1"810'DR11	1"810'DR11	1 1/4"	1"810'DR11	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School A5 02/05/25	West Hardin Middle School A5 03/04/25	West Hardin Middle School A6 02/05/25	West Hardin Middle School A6 03/04/25	West Hardin Middle School A7 03/04/25
Driller:	Larry Fuson	Sheep	Larry Fuson	Sheep	Sheep
Rig #	Rig #8	Rig #2	Rig #8	Rig #2	Rig #2
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Air Rotary
Casing Hammer Bore Diameter	7 7/8"	8"	7 7/8"	8"	8"
Bottom Hole Bore Diameter	4 7/8"	4 1/8"	4 7/8"	4 1/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	150	400	400	400	400
Casing Set Depth:	180	180	185	185	180
Sub-Surfaces Strata / Water Flow	0-37 Clay 37-99 cracked up lime 99-133 cavern 133-164 solid 164-167 mud seam with water 167-175 broken rock 175-180 solid rock	180-230 limestone 230-400 shell water zone at 235	0-37 Clay 37-89 cracked up lime 89-98 void 98- 100 solid 100-110 cracked up rock 110-113 void 113-119 solid 119-125 void 125-130 solid 130-136 cracked up 136-164 limestone 164- 167 mudseam 167-180 broken up rock 180-185I lime	180-230 limestone 230-400 shell water zone 235	180-230 limestone 230-400 shell with water zone at 235
Loop Type, Diameter & Length:	1"810'DR11	1 1/4"	1"810'DR11	1 1/4"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.

Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School A7 03/11/25	West Hardin Middle School A8 03/05/25	West Hardin Middle School A8 03/11/25	West Hardin Middle School A9 03/05/25	West Hardin Middle School A9 03/11/25
Driller:	Larry Fuson	Sheep	Larry Fuson	Sheep	Larry Fuson
Rig #	Rig #8	Rig #2	Rig #8	Rig #2	Rig #8
Drilling Method:	Sonic	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	8"	6"	8"	6"
Bottom Hole Bore Diameter	4 7/8"	4 1/8"	4 7/8"	4 1/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	400	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	same as previous	180-230 limestone 230-400 shell water zone at 235	set casing	180-230 limestone 230-400 shell water zone at 235	set casing
Loop Type, Diameter & Length:	1"810'DR9	1 1/4"	1"810'DR9	1 1/4"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.

Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School B1 03/19/25	West Hardin Middle School B2 03/11/25	West Hardin Middle School C1 03/19/25	West Hardin Middle School C2 03/11/25	West Hardin Middle School D10 03/06/25
Driller:	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson	Nik Cornett
Rig #	Rig #8	Rig #8	Rig #8	Rig #8	Rig #7
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	6"	6"	6"	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-33 Clay 33-40 broken up rock 40-52 brown sand 52-53 void 53-76 sandstone 76-78 mud seam 70-157 lime 157 hard fracture 160-165 solid 165-167 Fracture 167-180solid Set 180'	set casing	0-33 Clay 33-40 broken up rock 40-52 brown sand 52-53 void 53-76 sandstone 76-78 mud seam 70-157 lime 157 hard fracture 160-165 solid 165-167 Fracture 167-180solid Set 180'	set casing	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"810'DR9	1"810'DR9	1"810'DR9	1"810'DR9	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School D11 03/06/25	West Hardin Middle School D14 03/03/25	West Hardin Middle School D15 03/03/25	West Hardin Middle School D17 02/24/25	West Hardin Middle School D18 02/24/25
Driller:	Nik Cornett	Nik Cornett	Nik Cornett	Nik Cornett	Nik Cornett
Rig #	Rig #7	Rig #7	Rig #7	Rig #7	Rig #7
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	6"	6"	6"	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1"	1"	1"	1"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School D18 02/25/25	West Hardin Middle School D3 03/19/25	West Hardin Middle School D4 03/19/25	West Hardin Middle School D9 03/07/25	West Hardin Middle School D1 03/19/25
Driller:	Nik Cornett	Nik Cornett	Nik Cornett	Nik Cornett	Larry Fuson
Rig #	Rig #7	Rig #7	Rig #7	Rig #7	Rig #8
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	6"	6"	6"	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	190	180
Casing Set Depth:	180	180	180	190	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 overburden clay 40-140 limestone 140-185 mud seam and broken shale	0-33 Clay 33-40 broken up rock 40-52 brown sand 52-53 void 53-76 sandstone 76-78 mud seam 70-157 lime 157 hard fracture 160-165 solid 165-167 Fracture 167-180solid Set 180'
Loop Type, Diameter & Length:	1"	1"	1"	1"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.

Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School D10 03/14/25	West Hardin Middle School D11 03/14/25	West Hardin Middle School D12 03/05/25	West Hardin Middle School D12 03/17/25	West Hardin Middle School D13 03/04/25
Driller:	Sheep	Sheep	Nik Cornett	Sheep	Nik Cornett
Rig #	Rig #2	Rig #2	Rig #7	Rig #2	Rig #7
Drilling Method:	Air Rotary	Air Rotary	Sonic	Air Rotary	Sonic
Casing Hammer Bore Diameter	6"	6"	7 7/8"	6"	6"
Bottom Hole Bore Diameter	4 1/8"	4 1/8"	4 7/8"	4 1/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	400	180	400	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	180-245 limestone 245-400 shell	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone
Loop Type, Diameter & Length:	1 1/4"	1 1/4"	1"	1 1/4"	1"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School D13 03/17/25	West Hardin Middle School D14 03/18/25	West Hardin Middle School D15 03/18/25	West Hardin Middle School D16 03/18/25	West Hardin Middle School D17 03/18/25
Driller:	Sheep	Sheep	Sheep	Sheep	Sheep
Rig #	Rig #2	Rig #2	Rig #2	Rig #2	Rig #2
Drilling Method:	Air Rotary	Air Rotary	Air Rotary	Air Rotary	Air Rotary
Casing Hammer Bore Diameter	6"	6"	6"	6"	6"
Bottom Hole Bore Diameter	4 1/8"	4 1/8"	4 1/8"	4 1/8"	4 1/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	400	400	400	400
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell	180-245 limestone 245-400 shell
Loop Type, Diameter & Length:	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School D2 03/11/25	West Hardin Middle School D5 03/17/25	West Hardin Middle School D6 02/10/25	West Hardin Middle School D6 03/13/25	West Hardin Middle School D7 02/17/25
Driller:	Larry Fuson	Nik Cornett	Nik Cornett	Nik Cornett	Nik Cornett
Rig #	Rig #8	Rig #7	Rig #7	Rig #7	Rig #7
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	6"	7 7/8"	6"	7 7/8"	6"
Bottom Hole Bore Diameter	4 7/8"	5 3/4"	4 7/8"	6"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	402	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	set casing	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 red clay 40-42 limestone 42-70 mud seam 70-140 limestone 140-142 mud seam 142-175 limestone 175-177 broken shale 177-400 hard limestone	0-40 overburden clay 40-140 limestone 140-145 mud seam 145-170 limestone 170-178 broken shale 178-180 hard limestone	0-40 clay overburden 40-45 limestone 45-70 mud seam 70-140 limestone 140-143 mud seam 143-175 busted shale 175-180 hard limestone
Loop Type, Diameter & Length:	1"810'DR9	1"	1"810'DR9	1"	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of March, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School D7 03/12/25	West Hardin Middle School D8 02/18/25	West Hardin Middle School D8 03/11/25	West Hardin Middle School E1 03/19/25	West Hardin Middle School E1 03/19/25
Driller:	Nik Cornett	Nik Cornett	Nik Cornett	Larry Fuson	Larry Fuson
Rig #	Rig #7	Rig #7	Rig #7	Rig #8	Rig #8
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	6"	6"	6"	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 overburden clay 40-140 limestone 100- 170 mud seam 170-178 broken shale 178-180 hard limestone	0-40 overburden 40-70 mud seam 70-100 limestone 100-140 140-143 mud seam 143-160 limestone 160-175 broken shale 175-180 hard limestone	0-40 overburden clay 40-100 limestone 140- 175 mud seam 175- 178 broken shale 178-180 hard limestone	0-33 Clay 33-40 broken up rock 40-52 brown sand 52-53 void 53-76 sandstone 76-78 mud seam 70-157 lime 157 hard fracture 160-165 solid 165-167 Fracture 167-180solid Set 180'	0-33 Clay 33-40 broken up rock 40-52 brown sand 52-53 void 53-76 sandstone 76-78 mud seam 70-157 lime 157 hard fracture 160-165 solid 165-167 Fracture 167-180solid Set 180'
Loop Type, Diameter & Length:	1"	1"	1"	1"810'DR9	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.**Drill Logs: As of March, 20 2024**

Project Name:	West Hardin Middle School	West Hardin Middle School
Bore Number:	E2	F1
Date:	03/11/25	03/19/25
Driller:	Larry Fuson	Larry Fuson
Rig #	Rig #8	Rig #8
Drilling Method:	Sonic	Sonic
Casing Hammer Bore Diameter	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"
Starting Footage	0	0
Ending Footage	180	180
Casing Set Depth:	180	180
Sub-Surfaces Strata / Water Flow	set casing	0-33 Clay 33-40 broken up rock 40-52 brown sand 52-53 void 53-76 sandstone 76-78 mud seam 70-157 lime 157 hard fracture 160-165 solid 165-167 Fracture 167-180solid Set 180'
Loop Type, Diameter & Length:	1"810'DR9	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.

Drill Logs: As of February, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School A1 02/05/25	West Hardin Middle School A2 02/05/25	West Hardin Middle School A3 02/05/25	West Hardin Middle School A4 02/05/25	West Hardin Middle School A5 02/05/25
Driller:	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson
Rig #	Rig #8	Rig #8	Rig #8	Rig #8	Rig #8
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	7 7/8"	7 7/8"	7 7/8"	7 7/8"	7 7/8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	100	100	100	100	150
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0'-37 Clay 37-93 cracked up limestone 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125- 126 void216-130 Solid rock 130- 136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid rock	0'-37 Clay 37-93 cracked up limestone Solid at 93 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125- 126 void216-130 Solid rock 130- 136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid rock	0-37 Clay. 37-44 lime. 44-45 void 45-49 Solid. 49-50 void 50-71 Solid 71-72 void 72-80 Solid 80-81 void 81-93 solid 93-94 void 94-100 solid 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125-126 void216-130 Solid rock 130-136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid rock	0-37 Clay. 37-44 lime. 44-45 void 45-49 Solid. 49-50 void 50-71 Solid 71-72 void 72-80 Solid 80-81 void 81-93 solid 93-94 void 94-100 solid 93-110 Solid 111-113 Cracked up rock 113-125 solid rock 125-126 void216-130 Solid rock 130-136 cracked up rock 136-164 solid rock 164-167 mud seam with water 167-175 broken rock 175-180 solid rock	0-37 Clay 37-99 cracked up lime 99-133 cavern 133-164 solid 164-167 mud seam with water 167-175 broken rock 175-180 solid rock
Loop Type, Diameter & Length:	1"810'DR11	1"DR11	1"810'DR11	1"810'DR11	1"810'DR11
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

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Drill Logs: As of February, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School A6 02/05/25	West Hardin Middle School A18 02/07/25	West Hardin Middle School A19 02/06/25	West Hardin Middle School A20 02/06/25	West Hardin Middle School A21 02/07/25
Driller:	Larry Fuson	Larry Fuson	Larry Fuson	Larry Fuson	Sheep
Rig #	Rig #8	Rig #8	Rig #8	Rig #8	Rig #2
Drilling Method:	Sonic	Sonic	Sonic	Sonic	Air Rotary
Casing Hammer Bore Diameter	7 7/8"	7 7/8"	7 7/8"	7 7/8"	8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	400	180	180	180	180
Casing Set Depth:	185	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-37 Clay 37-89 cracked up lime 89-98 void 98- 100 solid 100-110 cracked up rock 110-113 void 113-119 solid 119-125 void 125-130 solid 130-136 cracked up 136-164 limestone 164- 167 mudseam 167-180 broken up rock 180-185I lime	Set 180' casing in predrilled hole	Set 180" casing in predrilled hole	Set 180' of casing in predrilled hole	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water on it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone
Loop Type, Diameter & Length:	1"810'DR11	1"810'DR11	1"810'DR11	1"810'DR11	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of February, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School A22 02/13/25	West Hardin Middle School A23 02/05/25	West Hardin Middle School A24 02/04/25	West Hardin Middle School A25 02/04/25	West Hardin Middle School A26 02/03/25
Driller:	Sheep	Sheep	Sheep	Sheep	Sheep
Rig #	Rig #2	Rig #2	Rig #2	Rig #2	Rig #2
Drilling Method:	Air Rotary	Air Rotary	Air Rotary	Air Rotary	Air Rotary
Casing Hammer Bore Diameter	8"	8"	8"	8"	8"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	180	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone	0-40 clay 40-45 limestone 45-60 mud seam 60-75 fractured with water in it 75-125 limestone 125-135 mud seam 135-160 shell 160-170 mud seam 170-180 limestone
Loop Type, Diameter & Length:	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc.
Drill Logs: As of February, 20 2024

Project Name: Bore Number: Date:	West Hardin Middle School A27 02/03/25	West Hardin Middle School A27 02/06/25	West Hardin Middle School A29 02/05/25	West Hardin Middle School D6 02/10/25	West Hardin Middle School D7 02/17/25
Driller:	Sheep	Larry Fuson	Larry Fuson	Nik Cornett	Nik Cornett
Rig #	Rig #2	Rig #8	Rig #8	Rig #7	Rig #7
Drilling Method:	Air Rotary	Sonic	Sonic	Sonic	Sonic
Casing Hammer Bore Diameter	8"	7 7/8"	7 7/8"	6"	6"
Bottom Hole Bore Diameter	4 7/8"	4 7/8"	4 7/8"	4 7/8"	4 7/8"
Starting Footage	0	0	0	0	0
Ending Footage	180	180	180	402	180
Casing Set Depth:	180	180	180	180	180
Sub-Surfaces Strata / Water Flow	0-40 clay 40-45 limestone 45-60 mud seam 60-75 formation is fractured with water in it 75-125 limestone 125-135 mud seam 136-160 shell 160-170 mud seam 170-180 limestone	Setting casing behind another drill	0-33 Clay 33-40 broken up rock 40-52 brown sand 52-53 void 53-76 sandstone 76-78 mud seam 70-157 lime 157 hard fracture 160-165 solid 165-167 Fracture 167-180solid Set 180'	0-40 red clay 40-42 limestone 42-70 mud seam 70-140 limestone 140-142 mud seam 142-175 limestone 175-177 broken shale 177-400 hard limestone	0-40 clay overburden 40-45 limestone 45-70 mud seam 70-140 limestone 140-143 mud seam 143-175 busted shale 175-180 hard limestone
Loop Type, Diameter & Length:	1 1/4"	1"810'DR11	1"810'DR11	1"810'DR9	1"810'DR9
Grout Type / Backfill Material:	#9 Stone	#9 Stone	#9 Stone	#9 Stone	#9 Stone

Geothermal Earthworks, Inc. <i>Drill Logs: As of February, 20 2024</i>	
Project Name: Bore Number: Date:	West Hardin Middle School D8 02/18/25
Driller:	Nik Cornett
Rig #	Rig #7
Drilling Method:	Sonic
Casing Hammer Bore Diameter	6"
Bottom Hole Bore Diameter	4 7/8"
Starting Footage	0
Ending Footage	180
Casing Set Depth:	180
Sub-Surfaces Strata / Water Flow	0-40 overburden 40-70 mud seam 70-100 limestone 100-140 140-143 mud seam 143-160 limestone 160-175 broken shale 175-180 hard limestone
Loop Type, Diameter & Length:	1"
Grout Type / Backfill Material:	#9 Stone