

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

MAILING ADDRESS:

DIVISION OF MINERAL RESOURCES

OFFICE ADDRESS:

Box 3667
Charlottesville, VA 22903

JAMES L. CALVER, COMMISSIONER

McCormick Road
Charlottesville, Virginia

WATER WELL COMPLETION REPORT

OWNER: Harden Enterprises, Inc., Geothermal #60 Mailing Address: 1511-1513 East Hembroke Ave., Hampton, Virginia

TENANT: _____ Mailing Address: _____

DRILLER: Gruy Federal, Inc. Mailing Address: 2500 Tanglewilde #150 Houston TX

WELL LOCATION: County Elizabeth City Approx. 0.5 ~~xxx~~ miles East (direction) of
Road 258 on Road 351 and _____ feet _____ miles _____ (direction) of _____

(GIVE DIRECTION AND DISTANCE IN FEET OR MILES FROM TWO REFERENCE POINTS - ROADS, TOWNS, RIVERS, ETC. - ON COUNTY HIGHWAY OR OTHER MAP.)

DATE STARTED: Dec. 1, 1978 DATE COMPLETED: Dec. 5, 1978

TYPE OF DRILL RIG USED: Rotary TOTAL DEPTH 1019 feet

WATER LEVEL: Stands _____ feet below surface OR

has NATURAL flow of _____ gallons per minute.

YIELD TEST: Method _____

Drawdown _____ feet

Rate _____ gal. per min.

Duration _____ hrs., _____ min.

HOLE SIZE: 7-7/8 inches from 0 to 1019 feet

_____ inches from _____ to _____ feet

_____ inches from _____ to _____ feet

SCREEN SIZE: _____ inches from _____ to _____ feet

_____ inches from _____ to _____ feet

_____ inches from _____ to _____ feet

CASE SIZE: 4 1/2 inches from 2 to 1010 feet

_____ inches from _____ to _____ feet

_____ inches from _____ to _____ feet

WATER: Color _____ Taste _____

Odor _____ Temp. _____ °F

WELL TO SUPPLY: (check one) Home _____

Farm _____ Town _____ School _____

Industry _____ Other _____

GROUTING: Method _____

Material Class A Depth 1010 feet

PUMP: Type _____

Capacity _____ gal per min

Depth of intake _____ feet

WATER ANALYSIS AVAILABLE: Yes _____ No _____

DRILL CUTTINGS SAVED: Yes _____ No _____

(DRILL CUTTINGS SHOULD BE COLLECTED AT 10 FOOT INTERVALS. THESE SAMPLES MAY BE SHIPPED TO THIS OFFICE EXPRESS COLLECT. SAMPLE BAGS ARE FURNISHED FREE OF CHARGE UPON REQUEST.)

REMARKS: _____

LOG

FURNISHED BY: _____ DATE: _____

DEPTH (feet)		TYPE OF ROCK OR SOIL PENETRATED (gravel, clay, etc., hardness, color, etc.)	REMARKS (water, caving, shot, screen, sample, etc.)
FROM	TO		
		<p>The descriptions of this well are unpublished. For information call or write:</p> <p style="margin-left: 40px;">Virginia Polytech Inst. Geophysics Dept. Dr. Joe Lambiase (703) 961-6112</p>	

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 Box 3667, Charlottesville, VA 22903

INTERVAL SHEET

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Well Repository No.: C-42
 W- 5808

Date rec'd: 3-1-79 Date Processed: 3-11-80

Sample Interval: from 0 to: 1010

PROPERTY: Harden Enterprises - Geothermal #60

Number of samples: 95

COMPANY: Gruy Federal

Total Depth: 1019

COUNTY: Elizabeth City - Hampton

Oil or Gas: Water: XX Exploratory:

From-To	From-To	From-To	From-To	From-To
0-10	300-310	600-610	-	-
10-20	310-320	610-620	-	-
20-30	320-330	620-630	-	-
30-40	330-340	630-640	-	-
40-50	340-350	640-650	-	-
50-60	350-360	650-660	950-960	-
60-70	360-370	660-670	960-970	-
70-80	370-380	670-680	970-980	-
80-90	380-390	680-690	980-990	-
90-100	390-400	690-700	990-1000	-
100-110	400-410	700-710	1000-1010	-
110-120	410-420	710-720	-	-
120-130	420-430	720-730	-	-
130-140	430-440	730-740	-	-
140-150	440-450	740-750	-	-
150-160	450-460	750-760	-	-
160-170	460-470	760-770	-	-
170-180	470-480	770-780	-	-
180-190	480-490	780-790	-	-
190-200	490-500	790-800	-	-
200-210	500-510	800-810	-	-
210-220	510-520	810-820	-	-
220-230	520-530	820-830	-	-
230-240	530-540	830-840	-	-
240-250	540-550	840-850	-	-
250-260	550-560	850-860	-	-
260-270	560-570	860-870	-	-
270-280	570-580	870-880	-	-
280-290	-	880-890	-	-
290-300	590-600	890-900	-	-

Split - wash.

Owner: Harden Enterprises, Inc.
Driller: Geothermal #60
County: Gruy Federal
Elizabeth City (Hampton)

W# 5808
C# 42
Total Depth: 1019'
Quad: Hampton
Elev: 12'

Depth
(feet)

WELL LOG

0-10 Clay - light olive gray (5Y 5/1); abundant clay in clasts; sparse sand; fine to medium, subangular; some coarse; poor sorting; quartz; mica.

10-20 Clay - as above, except: some very coarse; plant debris.

20-30 Clay - as above, except: moderate sand.

30-40 Sand - light olive gray (5Y 5/1); abundant clay, loose; medium grained; subrounded; well sorted; 8% shell fragments - mollusks; Turritella; forams - Nonion; Textularia; Quinqueloculina; Globigerina; Discorbis; ostracods, echinoderm spines; mica.

40-50 Sand - as above, except: 25% shell fragments - scaphopod; Chamys Madisonia; 7% glauconite.

50-60 Sand, Clayey - as above, except: 30% shell fragments.

60-70 Sand - as above, except: 15% shell fragments.

70-80 Sand, Clayey - light olive gray (5Y 5/2); abundant clay; sand as above; 2% glauconite; 2% shell fragments; forams, ostracods (3 sp); mica.

80-90 Sand, Clayey - as above, except: 3% shell fragments.

90-100 Sand - as above, except: moderate clay in sand clasts; fine to very coarse; poor sorting; quartz; few granules; few fragments quartz; 3% glauconite; 7% shell fragments; forams - Eponides; Bolivina; Discorbis; ostracods.

100-110 Sand - as above, except: moderate olive gray (5Y 5/1); abundant clay clasts, fine to coarse, few very coarse; 3% shell fragments; garnet.

110-120 Sand - as above, except: light olive gray (5Y 6/1); fine to very coarse; 8% shell fragments - Chamis Madisonia.

120-130 Sand - as above, except: moderate clay; medium and coarse; some very coarse; 10% glauconite; 10% shell fragments; Yoldia Laevis.

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Depth
(feet)

130-140 Sand - as above, except: few pebbles; 7% shell fragments.

140-190 Shell Hash - as above, except: salt and pepper; 50% shell fragments; Turritella; forams; ostracods.

190-200 Shell Hash - as above; Chamys Comparilis.

200-210 Shell Hash - as above.

210-220 Shell Hash - as above; Nucula Proxima.

220-230 Shell Hash - as above.

230-240 Shell Hash - as above; large pebble; Chione; Turritella.

240-250 Shell Hash - as above.

250-260 Shell Hash - as above, except: tan and gray clasts of clay; moderate; sand, medium; some coarse; well sorted.

260-270 Shell Hash - as above.

270-280 Shell Hash - as above; some pebbles.

280-290 Sand - as above, except: 30% shell fragments.

290-300 Sand - as above.

300-310 Sand - as above, except: moderate clay clasts; medium to very coarse; some large granules; poor sorting; 40% shell fragments; Corbula Inaequalis.

310-330 Sand - as above, except: abundant clay, clasts and grains; 3% shell fragments.

330-340 Sand, Clayey - as above, except: medium olive gray (5Y 5/1); abundant clay clasts; 5% shell fragments; Turritella.

340-350 Sand, Clayey - as above.

350-360 Sand, Clayey - as above, except: 15% shell fragments.

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Depth
(feet)

360-370	Sand, Clayey - as above, except: 30% shell fragments.
370-380	Sand, Clayey - as above, except: 5% shell fragments.
380-390	Sand, Clayey - as above.
390-400	Sand, Clayey - as above.
400-410	Sand, Clayey - as above, except: 2% shell fragments.
410-420	Sand, Clayey - as above, except: 10% shell fragments - <u>Turritella</u> .
420-430	Sand, Clayey - as above, except: 5% shell fragments - <u>Polinices</u> .
430-440	Clay - as above, except: moderate sand; limestone clast.
440-450	Sand, Clayey - as above.
450-460	Clay - as above, except: sparse sand; 3% shell fragments.
460-470	Clay - as above.
470-480	Clay - as above, except: sparse shell fragments.
480-490	Clay - as above.
490-500	Clay - as above.
500-510	Clay - as above, except: 1% shell fragments.
510-520	Clay - as above, except: sparse shell fragments; very sparse sand; minute flakes of mica.
520-530	Clay - as above.
530-540	Clay - as above.
540-550	Clay - as above, except: some shell fragments.
550-560	Clay - as above.
560-570	Clay - as above, except: light olive gray (5Y 6/1); sparse shell fragments.

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Depth
(feet)

570-580 Clay - as above, except: light olive gray (5Y 6/1); sparse sand; 1% shell fragments.

580-590 No Sample.

590-600 Clay - as above, except: sparse sand; medium and coarse; some very coarse; sparse shell fragments.

600-610 Clay - as above, except: some glauconite.

610-620 Clay - as above, except: 1% shell fragments.

620-630 Clay - as above, except: no shell fragments.

630-640 Clay, Sandy - as above, except: abundant sand; medium to granule; 5% glauconite; some shell fragments; forams - Nonion.

640-650 Clay, Sandy - as above, except: 1% shell fragments.

650-660 Clay, Sandy - as above.

660-670 Clay, Sandy - as above.

670-680 Clay - as above, except: very sparse sand; no glauconite or shell fragments.

680-690 Clay - as above, except: sparse shell fragments.

690-700 Clay - as above, except: sparse sand, as above; 1%+ glauconite.

700-710 Clay - as above.

710-720 Clay - as above; 1% shell fragments.

720-730 Clay - as above.

730-740 Clay - as above.

740-750 Clay, Sandy - as above, except: abundant sand - medium to very coarse; some granular; 1% glauconite; 1% shell fragments - Turritella.

750-760 Clay, Sandy - as above, except: few pebbles; Chamys Madisonia.

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Depth
(feet)

760-770 Clay - as above, except: no shells; glauconite; sparse sand.

770-780 Clay, Sandy - as above, except: moderate sand; 1%+ glauconite; 2% shell fragments.

780-790 Clay - as above, except: moderate sand; 1% shell fragments.

790-800 Clay - as above.

800-810 Clay - as above, except: some pebble; no shell fragments.

810-820 Clay - as above.

820-830 Clay - as above.

830-840 Clay - as above, except: moderate sand; medium to very coarse; poor sorting; 1% glauconite; 1% shell-fragments.

840-850 Clay - as above.

850-860 Clay - as above.

860-870 Clay - as above.

870-880 Clay - as above, except: sparse shell fragments.

880-890 Sandy Clay - as above, except: some pebbles; 1% shell fragments.

890-900 As above.

900-950 No Samples.

950-960 Clay, Sandy - as above, except: light olive gray (5Y 5/2); 3% shell fragments.

960-970 Clay - as above, except: moderate sand; 1% glauconite; sparse shell fragments.

970-980 Clay - as above, except: 3% glauconite; iron stains.

980-990 Sand, Clayey - as above, except: abundant clay; 5% shell fragments.

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Depth
(feet)

990-1000	Clay - as above, except: moderate sand; sparse shell fragments; clasts of calcium carbonate; quartz and glauconite.
1000-1010	Clay - as above, except: moderate sand; few large granules; some shell fragments.
1010-1019	No Sample.

Logged by: J. K. Polzin
June 3/4, 1980