

The original and first copy of this report are to be filed with the

**RECEIVED NC**  
**STATE ENGINEER WATER WELL REPORT**  
 SEP 22 1971  
 STATE OF OREGON

**UMAT**  
 3061

State Well No. 4N/34-34

STATE ENGINEER, SALEM, OREGON 97310 (Please type or print)

within 30 days from the date of well completion. SALEM, OREGON (Do not write above this line)

State Permit No. \_\_\_\_\_

**(1) OWNER:**

Name B.L. DAVIS RANCH Inc.

Address Adams, Oregon 97810

**(2) TYPE OF WORK (check):**

New Well  Deepening  Reconditioning  Abandon

If abandonment, describe material and procedure in Item 12.

**(3) TYPE OF WELL:**

Rotary  Driven   
 Cable  Jetted   
 Dug  Bored

**(4) PROPOSED USE (check):**

Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other

**CASING INSTALLED:**

Threaded  Welded

....." Diam. from ..... ft. to ..... ft. Gage .....  
16" Diam. from 0 ft. to 44'3" ft. Gage 375  
 ..... " Diam. from ..... ft. to ..... ft. Gage .....

**PERFORATIONS:**

Perforated?  Yes  No.

Type of perforator used \_\_\_\_\_

Size of perforations in. by in.  
 ..... perforations from ..... ft. to ..... ft.  
 ..... perforations from ..... ft. to ..... ft.  
 ..... perforations from ..... ft. to ..... ft.

**(7) SCREENS:**

Well screen installed?  Yes  No

Manufacturer's Name \_\_\_\_\_  
 Type \_\_\_\_\_ Model No. \_\_\_\_\_  
 Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**(8) WELL TESTS:**

Drawdown is amount water level is lowered below static level farmore

Was a pump test made?  Yes  No If yes, by whom? Pendleton

Yield: 1800 gal./min. with 225 ft. drawdown after 3 hrs.  
1900 " " 255 " " 24 "  
2000 " " 257 " " 10 "

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m.

Temperature of water 72 Depth artesian flow encountered ..... ft.

**(9) CONSTRUCTION:**

Well seal—Material used cement grout

Well sealed from land surface to 44'3" ft.

Diameter of well bore to bottom of seal 20 in.

Diameter of well bore below seal 16 in.

Number of sacks of cement used in well seal 175 sacks

Number of sacks of bentonite used in well seal none sacks

Brand name of bentonite \_\_\_\_\_

Number of pounds of bentonite per 100 gallons

of water \_\_\_\_\_ lbs./100 gals.

Was a drive shoe used?  Yes  No Plugs NO Size: location 50 ft.

Did any strata contain unusable water?  Yes  No

Type of water? \_\_\_\_\_ depth of strata \_\_\_\_\_

Method of sealing strata off \_\_\_\_\_

Was well gravel packed?  Yes  No Size of gravel: \_\_\_\_\_

Gravel placed from ..... ft. to ..... ft.

**(10) LOCATION OF WELL:**

County Umatilla Driller's well number \_\_\_\_\_  
 1/4 Section 34 T. 4N R. 34E W.M.

Bearing and distance from section or subdivision corner \_\_\_\_\_

**(11) WATER LEVEL: Completed well.**

Depth at which water was first found 16 22 ft.

Static level 15' 1" below land surface Date 10/10/70

Artesian pressure \_\_\_\_\_ lbs. per square inch. Date \_\_\_\_\_

**(12) WELL LOG:**

Diameter of well below casing 16

Depth drilled 1693 ft. Depth of completed well 1693 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top soil	0	9	
Brown rock	9	22	
Black rock soft & water bearing	22	31	
Grey basalt	31	75	
Black basalt	75	95	15
Conglomerate of rock & brn. clay	95	112	
Black basalt	112	125	
Porous black rock & gry clay	125	145	
Broken black basalt & blue clay	145	245	
Black shale, cavey	245	265	
Black porous rock & gry. clay	265	410	
Grey basalt	410	435	
Black porous basalt, some clay	435	510	
Black basalt	510	540	
Grey basalt	540	645	
Black basalt	645	750	
Grey clay, sticky	750	755	
Grey basalt, streaks of clay	755	825	
Black basalt, some clay	825	900	40

Work started Oct 19 70 Completed Sept 1 1971

Date well drilling machine moved off of well Sept. 30 1971

**Drilling Machine Operator's Certification: CONTINUED PAGE #2**

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] [Signature] Date \_\_\_\_\_, 19\_\_\_\_  
 (Drilling Machine Operator)

Drilling Machine Operator's License No. 545

**Water Well Contractor's Certification:**

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name D. K. "Don" Smith

(Person, firm or corporation) (Type or print)

Address P. O. Box 179 Walls, Wash. 99362

[Signed] [Signature]  
 (Water Well Contractor)

Contractor's License No. 204 Date \_\_\_\_\_, 19\_\_\_\_

NOTICE TO WATER WELL CONTRACTOR: The original and first copy of this report are to be filed with the

RECEIVED SEP 22 1971

STATE OF OREGON WATER WELL REPORT

State Well No. 4N/34-34

STATE ENGINEER, SALEM, OREGON (Please type or print) STATE ENGINEER SALEM, OREGON (Do not write above this line)

State Permit No.

PAGE #2

(1) OWNER:

Name Address

(2) TYPE OF WORK (check):

New Well [ ] Deepening [ ] Reconditioning [ ] Abandon [ ] If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary [ ] Driven [ ] Cable [ ] Jetted [ ] Dug [ ] Bored [ ]

(4) PROPOSED USE (check):

Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ]

CASING INSTALLED:

Threaded [ ] Welded [ ] " Diam. from ft. to ft. Gage

PERFORATIONS:

Perforated? [ ] Yes [ ] No. Type of perforator used Size of perforations in. by in.

(7) SCREENS:

Well screen installed? [ ] Yes [ ] No Manufacturer's Name Type Model No. Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level Was a pump test made? [ ] Yes [ ] No If yes, by whom? Yield: gal./min. with ft. drawdown after hrs.

(9) CONSTRUCTION:

Well seal—Material used Well sealed from land surface to ft. Diameter of well bore to bottom of seal in. Diameter of well bore below seal in. Number of sacks of cement used in well seal sacks Number of sacks of bentonite used in well seal sacks Brand name of bentonite Number of pounds of bentonite per 100 gallons of water lbs./100 gals. Was a drive shoe used? [ ] Yes [ ] No Plugs Size: location ft. Did any strata contain unusable water? [ ] Yes [ ] No Type of water? depth of strata Method of sealing strata off Was well gravel packed? [ ] Yes [ ] No Size of gravel: Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Driller's well number 1/4 1/4 Section T. R. W.M. Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found ft. Static level ft. below land surface. Date Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing Depth drilled ft. Depth of completed well ft. Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

Table with columns: MATERIAL, From, To, SWL. Rows include: Red & black basalt with clay, Black basalt, Black basalt, porous W. B., Broken black basalt, Porous black basalt, Grey basalt, Porous black basalt (W.B.), Black & brn. basalt mixed, Black basalt Porous, Grey basalt, Conglomerate, red, brn, & blk., Black basalt, porous, Light grey basalt, Black basalt, Grey shale, clay, Grey basalt, some clay, Black basalt, sticky clay, Black basalt, Porous black basalt.

Work started Date well drilling machine moved off of well 19

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] (Drilling Machine Operator) Date, 19

Drilling Machine Operator's License No.

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name (Person, firm or corporation) (Type or print)

Address [Signed] (Water Well Contractor)

Contractor's License No. Date, 19

NOTICE TO WATER WELL CONTRACTOR  
The original and first copy  
of this report are to be  
filed with the  
STATE ENGINEER, SALEM, OREGON  
within 30 days from the date  
of well completion.

**RECEIVED**  
SEP 22 1971

**WATER WELL REPORT**

**STATE ENGINEER STATE OF OREGON**  
(Please type or print)

(Do not write above this line)

State Well No. 4N/34-34

State Permit No. \_\_\_\_\_

**(1) OWNER:**

Name \_\_\_\_\_  
Address \_\_\_\_\_

**(2) TYPE OF WORK (check):**

New Well  Deepening  Reconditioning  Abandon   
If abandonment, describe material and procedure in Item 12.

**(3) TYPE OF WELL:**

Rotary  Driven   
Cable  Jetted   
Dug  Bored

**(4) PROPOSED USE (check):**

Domestic  Industrial  Municipal   
Irrigation  Test Well  Other

**CASING INSTALLED:**

Threaded  Welded

" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Gage \_\_\_\_\_  
" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Gage \_\_\_\_\_  
" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Gage \_\_\_\_\_

**PERFORATIONS:**

Perforated?  Yes  No.

Type of perforator used \_\_\_\_\_

Size of perforations in. by \_\_\_\_\_ in.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**(7) SCREENS:**

Well screen installed?  Yes  No

Manufacturer's Name \_\_\_\_\_  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**(8) WELL TESTS:**

Drawdown is amount water level is lowered below static level

Was a pump test made?  Yes  No If yes, by whom? \_\_\_\_\_

Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
" " " " " "  
" " " " " "

Ballor test \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.

Artesian flow \_\_\_\_\_ g.p.m.

Temperature of water \_\_\_\_\_ Depth artesian flow encountered \_\_\_\_\_ ft.

**(9) CONSTRUCTION:**

Well seal—Material used \_\_\_\_\_ ft.  
Well sealed from land surface to \_\_\_\_\_ ft.  
Diameter of well bore to bottom of seal \_\_\_\_\_ in.  
Diameter of well bore below seal \_\_\_\_\_ in.  
Number of sacks of cement used in well seal \_\_\_\_\_ sacks  
Number of sacks of bentonite used in well seal \_\_\_\_\_ sacks  
Brand name of bentonite \_\_\_\_\_  
Number of pounds of bentonite per 100 gallons  
of water \_\_\_\_\_ lbs./100 gals.  
Was a drive shoe used?  Yes  No Plugs \_\_\_\_\_ Size: location \_\_\_\_\_ ft.  
Did any strata contain unusable water?  Yes  No  
Type of water? \_\_\_\_\_ depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_  
Was well gravel packed?  Yes  No Size of gravel: \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**(10) LOCATION OF WELL:**

County \_\_\_\_\_ Driller's well number \_\_\_\_\_  
1/4 Section T. R. W.M.

Bearing and distance from section or subdivision corner \_\_\_\_\_

**(11) WATER LEVEL: Completed well.**

Depth at which water was first found \_\_\_\_\_ ft.

Static level \_\_\_\_\_ ft. below land surface. Date \_\_\_\_\_

Artesian pressure \_\_\_\_\_ lbs. per square inch. Date \_\_\_\_\_

**(12) WELL LOG:**

Diameter of well below casing \_\_\_\_\_

Depth drilled \_\_\_\_\_ ft. Depth of completed well \_\_\_\_\_ ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Grey basalt, hard	1492	1515	
Black basalt (water bearing)	1515	1645	56
Grey shale & basalt "	1645	1685	75
Dark grey basalt "	1685	1693	83
(lost cuttings)			
16" hole drilled from 0'-817			
12" hole drilled from 817'-1693'			

Work started \_\_\_\_\_ 19 Completed \_\_\_\_\_ 19

Date well drilling machine moved off of well \_\_\_\_\_ 19

**Drilling Machine Operator's Certification:**

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] \_\_\_\_\_ Date \_\_\_\_\_, 19\_\_\_\_\_  
(Drilling Machine Operator)

Drilling Machine Operator's License No. \_\_\_\_\_

**Water Well Contractor's Certification:**

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name \_\_\_\_\_  
(Person, firm or corporation) (Type or print)

Address \_\_\_\_\_

[Signed] \_\_\_\_\_  
(Water Well Contractor)

Contractor's License No. \_\_\_\_\_ Date \_\_\_\_\_, 19\_\_\_\_

Oregon State Engr

RECEIVED  
FEB 24 1966

STATE ENGINEER  
SALEM OREGON

GROUND WATER BRANCH  
Box 3087  
Portland, Oregon 97208

February 23, 1966

Mr. Neil B. Lieuallien  
Route 1  
Weston, Oregon

Dear Mr. Lieuallien:

This is in response to your recent inquiry about ground-water information in the east one-half of sec. 1, T. 4 N., R. 35 E., 3 miles northeast of Weston, Oreg.

All this area is underlain by the layered lava flows known as the Columbia River Basalt. Originally horizontal, the basalt flows have been warped in the great arch of the Blue Mountains, and at your place ~~it is~~ <sup>they are</sup> inclined (dips) about 4 degrees toward the northwest. The parts of the basalt that are permeable enough to yield large amounts of water to wells are restricted to the rubbly top parts of some of the flows. Consequently, the ground water is largely stratified and moves generally down dip to the northwest. As you have mentioned, ground water can be impounded stratigraphically where the permeable rock pinches out, or structurally where the permeable strata are offset or broken by a fault cutting across the direction of the dip.

The larger and longer faults result in erosional features which, along with a few exposures of the crushed rock of the fault zone, can lead to their identification. There are indications of two such faults in the Weston area. One that has been recognized in the Umatilla Valley to the south may trend just east of north into the Dry Creek drainage and pass along the abrupt change of slope one-half mile east of Weston. The Winn flowing well a mile west of you may be on the east side of that fault zone. The nonflowing well north of the Winn well may be in the fault zone. The present drilling southeast of Weston is testing the possibility of high-level water on the east side of that zone. Another supposed fault zone is parallel and 2 miles farther east. It crosses Dry Creek just above Don Olinger's house a mile or so above your place. Neither of these suspected (but so far unproven) faults greatly affects the ground-water situation at your place.

From the foregoing description and the layered appearance of the basalt in the canyon side north of Dry Creek, you can conclude that a well on the hill where you want the water will pass through these same layers of basalt for 400 feet until it penetrates to the level of Dry Creek. Also, you can be reasonably sure that any water in highly permeable

parts of this basalt above stream level would move generally northwest and would flow out of the outcrop somewhere on the hillsides. From this line of reasoning, and also from the fact that the up-dip side of any water-bearing layer could receive water only from a narrow area to the east (because of the Dry Creek and Cause Creek canyons), we can conclude that a well on your hill north of Dry Creek would probably obtain only small inflows of perched water while penetrating to the level of Dry Creek.

When you reduce your problem to the most likely situation (of obtaining ground water probably standing at about the same altitude either from deep wells on the upland or from less deep wells in Dry Creek valley), the factors governing a course of action are largely economic. The cost of pipeline against 400 feet of extra drilling, a difference in the cost of pumps and powerlines, a difference in the ease of operation and maintenance, and lots of other factors such as capital investments and taxes.

From the ground-water and geologic information, as I see it, I'd expect to get ground water in irrigation amounts (at least several hundred gallons per minute) standing at about the level of Dry Creek when drilling on the hill in SE $\frac{1}{4}$  sec. 1. If I were drilling such a well there, I would be sure to keep it at least 12 inches in diameter for the first 600 feet and to require that it be a straight hole.

Copies of the Weston Mountain and Athena quadrangle maps are enclosed.

Sincerely yours,

R. C. Newcomb  
Research Geologist

cc: Oregon State Engineer, Salem, Oregon ✓  
Acting Dist. Geologist, GW, Portland, Oregon