## NOTICE TO WATER WELL TO THE ORIGINAL and fire open to the control of this report are the DEC 17 1968

STATE OF OREGON

STATE ENGINEER, SALEY OR COPY OF THE ORIGINATION (Please type or print) within 30 days from the date ENGINEER (Do not write above this line) of well completion SALEM. OREGON G-4534

(1) OWNER:	(11) LOCATION OF WELL:			
Name CITY OF LEXIGON	County MORROW Driller's well number 4793			
Address IRRIGON, OFFGON	NW 14 SW 14 Section 19 T. SN R. 27E W.M.			
(2) MVDE OF WORK (Aboda).	Bearing and distance from section or subdivision	corner		
(2) TYPE OF WORK (check):				
New Well   Deepening □ Reconditioning □ Abandon □				
If abandonment, describe material and procedure in Item 12.				
(3) TYPE OF WELL: (4) PROPOSED USE (check):	(12) WELL LOG: Diameter of well be	elow casi	ng 6	•
Rotary A Driven Domestic Industrial Municipal	Depth drilled 3/7 ft. Depth of comple			3.5 ft.
Dug   □   Bored   □   Irrigation   □   Test Well   □   Other   □				
CASING INSTALLED: Threaded Welded	Formation: Describe color, texture, grain size a and show thickness and nature of each stratum			
13." Diam. from 0 tt. to 85 tt. Gage 1330	with at least one entry for each change of forms in position of Static Water Level as drilling prod			
6" Diam from 0 ft to 199 ft Gage 1350			T	
" Diam. fromft. toft. Gage	MATERIAL	From	To	SWL
,k	3AND	0	3	
PERFORATIONS: Perforated? X Yes \( \square\) No.	CLAY AND SAND	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	12-	
Type of perforator used M/LL3 KNIFE	SAND AND GRAVEL	3ek	24	
Size of perforations 1/4 in. by 3/2-in.	- 17 / SZ - 17 /	27	31	
360 perforations from 125 ft. to 185 ft.	FRANKL	727	38	
perforations fromft. toft.	GRAVEL AND BOUNDERS	1/2	-7/	
perforations fromft. toft.	GRAVEL AND SOULDERS	71	73	
perforations from ft. to ft.	BLACK BASALT	777	85	
perforations from ft. to ft.	HARD GREY BASALT	86	116	
(T) CODEENS.	MED. HARD GREY BASALT	116	123	
(7) SCREENS: Well screen installed?   Yes No	INNER BED - FOROUS LAW	7	70.0	
Manufacturer's Name	AND BLUE GREEN CLAY	123	164	<u> </u>
Type Model No.	BROKEN BROWN ROCK	164	186	
Diam. Slot size Set from ft. to ft.	HARD BLACK BASALT	186	199	
Diam. Slot size Set from ft. to ft.	HARD GREY BASAUT	199	298	
(8) WATER LEVEL: Completed well.	SOFT GREY AND BACK"	798	302	
Static level 38 ft. below land surface Date // 100/68	WATEL BEARING BUSCK ROL	302	314	
tesian pressure lbs. per square inch Date	HARD GREG BASALT	314	317	
(9) WELL TESTS: Drawdown is amount water level is				
lowered below static level			<del></del>	
Was a pump test made? Yes No If yes, by whom?	Work started AUG 19 19 8 Complete	d 77	Ep 5	1068
geld: 142 gal./min. with 1/5tt. drawdown after 29 hrs.	Date well drilling machine moved off of well	#75°	C /	1968
Ju 11 11	the state of the s		<u> </u>	100 6
" " " "	Drilling Machine Operator's Certification:  This well was constructed under my dir			35-4-
Bailer test gal./min. with ft. drawdown after hrs.	rials used and information reported above			
Artesian flow g.p.m. Date	knowledge and belief.			
Temperature of water 62-Was a chemical analysis made? [] Yes No	[Signed] [unity to now ] (Drilling Machine Operator)	Date 🎉	) ec. 13	, 19.68
(10) CONSTRUCTION:	/ /	رسير		
Well seal-Material used CEMENT GROUT	Drilling Machine Operator's License No	عرد	**********	
Depth of seal 85 77.	Water Well Contractor's Certification:			
Diameter of well bore to bottom of sealin.	This well was drilled under my jurisdiction and this report is			
Were any loose strata cemented off? Yes No Depth	true to the best of my knowledge and belief.			
Was a drive shoe used?  Yes  No	NAME RI STRASSER DRILLING CO			
Did any strata contain unusable water? MYes No	(Person, firm or corporation)		or print)	** **
Type of water? SULPHER depth of strata 302-314	Address 8/10 SE SUNSET LINE	. 15h	e Tilby	DUR
17 m 1 m 1 m 1 m 1 m	al A & Man	111		,
V	[Signed] (Water Well Contract	or)	************	
Was well gravel packed?   Yes 🕅 No   Size of gravel:	ter .	DE	16	[8
Gravel placed from ft. to ft.	Contractor's License No. Date		, , , , , , , , , , , , , , , , , , ,	1940.



Umatille Co.

RECEIVED

STATE ENGINEER
SALEM OREGON

CORNELL, HOWLAND, HAYES & MERRYFIELD

ENGINEERS AND PLANNERS

LOGAN BUILDING • 500 UNION STREET • SEATTLE, WASHINGTON 98101
TELEPHONE: AREA CODE 206/624-3625
OTHER OFFICES IN: PORTLAND • BOISE • CORVALUS

S-4952.2

4 December 1968

Oregon State Board of Health State Office Building 1400 S. W. Fifth Avenue Portland, Oregon 97201

Gentlemen:

Well No. 1 - City of Irrigon, Oregon

The above well was drilled to a depth of 317 feet, and artesian flow of about 15 gallons per minute (gpm) with a shut-in pressure of 5 pounds per square inch was obtained on 16 October 1968. This water was allowed to flow freely to waste for about three weeks and did not appear to diminish in quantity or improve in quality which was unsatisfactory due to a high hydrogen sulphide content.

A pumping test on 13 November 1968 produced about 150 gallons per minute for four hours with pumping level of 210 feet, and 100 gpm for the next twelve hours from about 135 feet. A strong odor of H<sub>2</sub>S persisted and a field test kit indicated a concentration of 1.0 part per million (ppm). Temperature was 64° F. At this time the well was continuously cased 6-inch diameter from the surface to 199 feet depth with concrete seal outside the casing at that depth. There was open 6-inch rock hole to 317 feet and 12-inch casing through alluvium from surface to 85 feet depth with cement grout seal water-tested at that depth.

It was decided to seal out the poor quality water by placing a cement grout plug from 282 feet to 270 feet in the open 6-inch hole on sand and gravel backfill from the bottom of the hole at 317 feet. This plug was checked out after three days by bailing down without recovery of the artesian pressure. As an added precaution, the hole was backfilled with sand and gravel from 270 feet to 255 feet and a second grout plug placed from 255 feet to 245 feet.

The 6-inch casing was perforated with a Mills knife from 185 feet up to 125 feet with six holes around per foot, and the static water level of 38 feet originally experienced in the basalt returned. The water level in the top alluvial material had been 38 feet which was cased out with the 12-inch casing and became 36 feet when drilling in the basalt.



Oregon State Board of Health 4 December 1968 Page -2-

A second pump test was conducted on 20 November 1968 which produced 140 gallons per minute from a depth of 153 feet after twenty-eight hours of pumping. This water was of better quality and field tested at 0.1 ppm  $\rm H_2S$  or less with some slight odor and no taste. Temperature was 62° F. It is intended to use this as the source of water for the City of Irrigon, possibly with simple aeration.

We enclose a copy of a chemical analysis of a sample of the water tested less than 24 hours after collection. It appears similar to other water obtained from the basalt in the area and acceptable for municipal supply. We are presently proceeding with final design of the supply facilities which will be submitted for your review and approval on completion, but would appreciate your assurance that the chemical characteristics of the water are acceptable.

Very truly yours,

CORNELL, HOWLAND, HAYES & MERRYFIELD

Antony B. Barnes

ABB/dc

Enclosure: Chemical Analysis

c: Mr. Chester A. Wilson, Mayor, Irrigon

Mr. James R. Sheetz, District Sanitary Engineer, Pendleton

Morrow County Health Officer, Boardman

✓ State Engineer's Office, Salem

## NORTHWEST LABORATORIES

## APPLIED INDUSTRIAL RESEARCH

STAFF AFFILIATIONS: A.S.T.M.-A.C.S.-A.I.Ch.E.-A.C.I.-A.S.M.-A.O.C.S.-A.M.E-.N.S.P.E.-A.C.I.L.

200 JAMES STREET . SEATTLE, WASHINGTON 98104 . TELEPHONE MA. 2-0680

Report to: Cornell, Howland, Hayes & Marryfield

\*\*Equivalent Parts Per Million

Date:

November 26, 1968

Report on: Water Sample

Lab. No.

C 6628

IDENTIFICATION:

City of Irrigon, Oregon. Water from about 150 depth in party decomposed basalt for analysis for domestic supply Sample taken 11-21-68 at 5:00 p.m.

	See le	See letter - Umatilla Co.		
PHYSICAL CHARACTERISTICS:		1 1 4 2 1 4 2 1		
Color (Cobalt-Platinum Scale)	$1 \times \omega$	plug et 200 ft, H25 bu		
Turbidity	2	-		
Dissolved Solids	298.0			
CHEMICAL CHARACTERISTICS:				
pli	8.0			
Ionie:	PPM*	EPHAA		
Silica, SiO <sub>2</sub>	65.5	2.1812		
Iron, Fe	0.10	ar43		
Calcium, Ca	7.3	0.364		
Magnesium, Mg,	2.9	0.239		
Potessium + Sodium as Na	109.8	4.774		
Manganese, Mn Less	Than 0.01	•MCSIS		
Hydroxyl, OH	None	(CD exa		
Carbonate, CO3	10.9	0.363		
Bicarbonate, HCO3	252.1	4.134		
Sulphate, SO <sub>4</sub>	8.4	0.175		
Chloride, Cl	25.0	0.705		
Nitrate Nitrogen as 103	0.04	gg þada		
	Than 0.01	<b>-1-43</b>		
Fluoride, F	1.6	Ø)+		
Free CO2	4.1	••		
Normal Carbonate Alkalinity as CaCO3	18.2			
Bicarbonate Alkalinity as CaCO2	206.6			
Total Hardness as CaCO3	30.2			
Non Carbonate Hardness as CaCO3	None	•		
Hardness Classification	Soft Water (I	Range: 15-50 PPM)		
# Parts Per Hillion	*			

NORTHWEST LABORATORIES