Oregon

WATER
RESOURCES
DEPARTMENT

Watermaster

07/23/92

Steve Schneider
21881 River Rd N.E.
St. Paul, Oregon 97137

RE: Special Standards for Hermistons new well #2; SC#32007

Dear Steve,

This is written conformation approving the special standards granted to you by phone on July 10, 1992 by Brian Mayer.

This standard is granted upon the condition that the well be completed as detailed in your letter dated July 07, 1992, a copy of which is attached.

Granting this special standard does not relieve the constructor and owner of the well from any future liability, in case the construction method provides an avenue for pollution the groundwater body.

Sincerly,

Michael Ladd
NC Regional Manager

cc: Dude Woodward - City of Hermiston

PH. 503-276-7111
3920 Westgate
Pendleton, OR 97801

W-C9

WELL DRILLING
IRRIGATION
CONTROL SYSTEMS

SCHNEIDER
EQUIPMENT, INC.
AND DRILLING CO.

PUMPS
ENGINEERED WATER SYSTEMS
SALES AND SERVICE

FAX (503) 633-2668

21881 River Road N.E. St. Paul, Oregon 97137 (503) 633-2666

July 7, 1992

Water Resources Department
North Central Region
3920 Westgate
Pendleton, OR 97801
Attn: Brian Mayer

RE: City of Hermiston New Well No. 2; SC#32007

Dear Brian,

Pursuant to our phone conversation yesterday, this letter is our request for special standards on the above referenced well.

A formation log of the well is attached along with a sketch of the as-built to date. As you can see, a 24" diameter casing was driven as the upper borehole was drilled with cable tool to 45'. The casing was then cut at 34' on August 28, 1991, to aid in future removal during grouting. Subsequently, the rest of the well was constructed during which much vibration occurred along with substantial ground surface loading around the 24" casing. We have now been attempting to extract the 24" upper casing in order to simultaneously place a grout seal around the 20" casing. Our exhaustive efforts have failed even though we have utilized jacks exceeding a half million pounds of pull along with vibration from a down hole hammer. We have taxed/exceeded normal water well technology standards.

No additional water resource protection will be gained by extracting, or attempting to extract the 24" casing. The only alluvial water bearing within the depth of the 24" casing is that which is exposed to the surface and only extends to 15'. This shallow formation would not benefit from a standard 18' surface seal since it is directly connected to ground surface. Disturbing the 24" casing will only damage an otherwise very pronounced bond (seal) to the natural formation. We therefore

propose to leave the 24" casing in place and pump a cement grout seal full depth from the top of the pea gravel (150') to the surface, around the 20" casing. This will provide more than standard protection for the waters in the basalt. Will this meet with your approval?

Thank you for your prompt review of this abnormal situation.

Sincerely,

Stephen J. Schneider
VP-Drill Operations

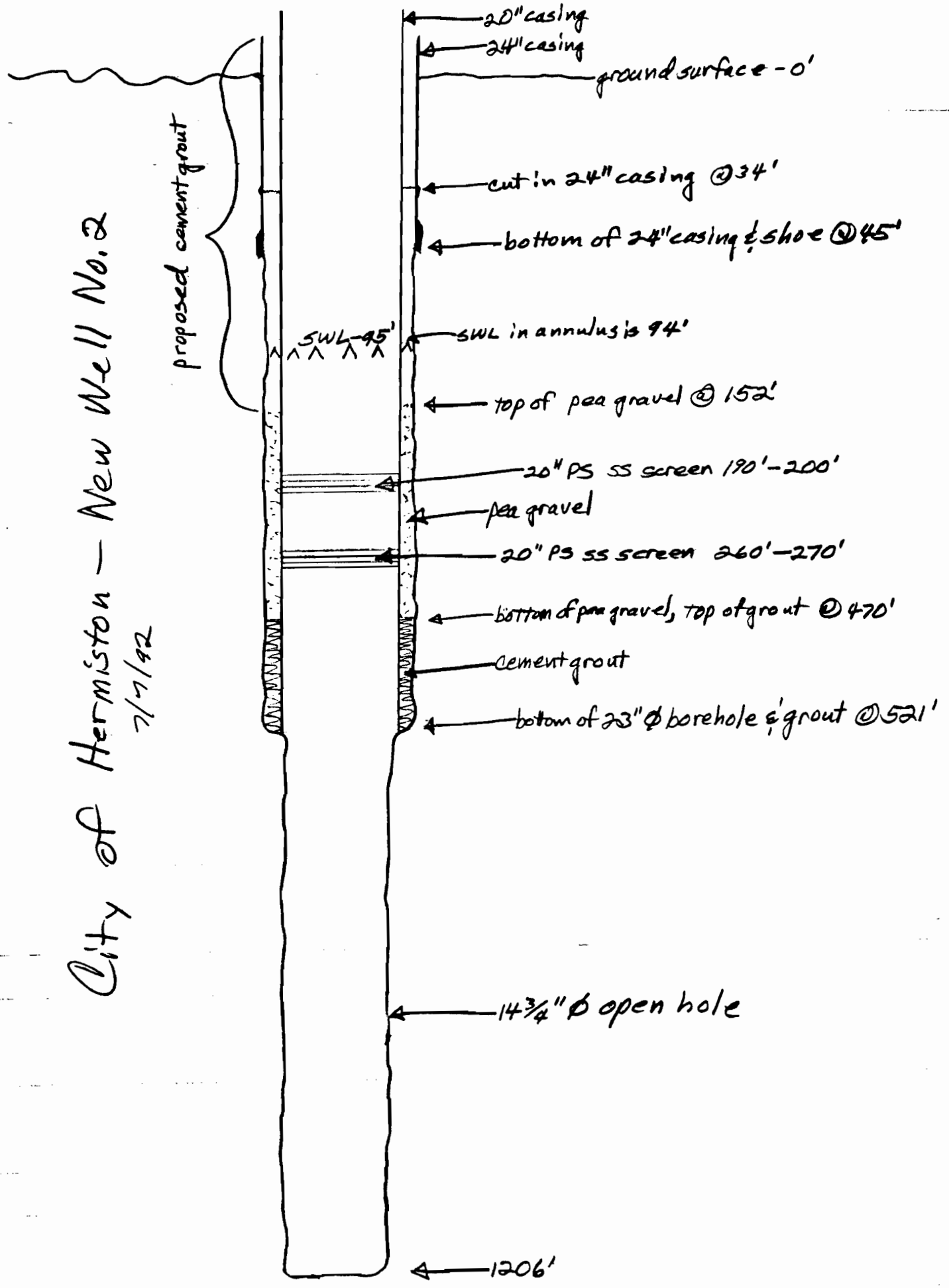
SJS/kss
L1022.COH

cc: Stan Wallulis, Wallulis & Assoc.
Dude Woodward, City of Hermiston

City of Hermiston
New Well No. 2
by Schneider Drilling Co.
S.C. #32007

From	To	Description
0	1	Top soil
1	9	Sand, coarse
9	15	Boulders, gravel, & sand
15	25	Clay, greenish brown w/gravel imbedded
25	30	Clay, blue w/claystone, & some claystone brown
30	35	Claystone & clay, blue w/some rock pieces
35	38	CS, blue & clay, blue & basalt, blk, vesicular
38	40	Basalt, blk, vesicular, w/claystone, blue
40	43	Basalt, blk, vesicular, w/clay & claystone blue
43	46	Basalt, blk, vesicular, med
46	65	Basalt, blk, fractured, med
65	155	Basalt, blk w/some fractures, med-hard
155	160	Basalt, blk, fractured w/claystone, hard, gray
160	165	Basalt, blk, cindery w/clay, blk
165	175	Sandstone, blk & clay, blk
175	185	Sandstone and pea gravel cemented w/clay, blk
185	190	Basalt, broken, blk w/clay, green
190	204	Basalt, blk, well fractured
204	228	Basalt, gray, hard w/some fractures
228	233	Basalt, blk, fractured
233	235	Basalt, & clay, green
235	246	Clay & claystone, green
246	250	Basalt, blk, & claystone, green
250	260	Basalt, blk, vesicular, broken w/some clay
260	265	Basalt, blk, cindery
265	270	Basalt, blk, broken & clay, green
270	279	Basalt, red & blk, vesicular, cindery
279	288	Basalt, gray, fractured, hard
288	294	Basalt, gray w/some fractures, hard
294	303	Basalt, gray, well fractured, med-hard
303	318	Basalt, gray, w/some fractures, hard
318	325	Basalt, gray, fractured, med-hard
325	373	Basalt, gray, w/some fractures, hard
373	384	Basalt, blk, fractured, med-hard
384	390	Basalt, blk, w/claystone green, soft
390	398	Basalt, blk, well fractured, vesicular
398	404	Basalt, blk, fractured, med
404	415	Basalt, blk w/some claystone, vesicular
415	420	Basalt, blk, fractured, med-hard
420	435	Basalt, blk, hard
435	439	Basalt, blk w/claystone, soft
439	455	Basalt, blk, fractured, med-hard
455	505	Basalt, gray w/some fractures, hard
505	520	Basalt, gray w/fractures, hard
520	525	Basalt, gray & blk, fractured, med-hard
525	528	Basalt, gray, very hard, fractured
528	553	Basalt, gray, hard

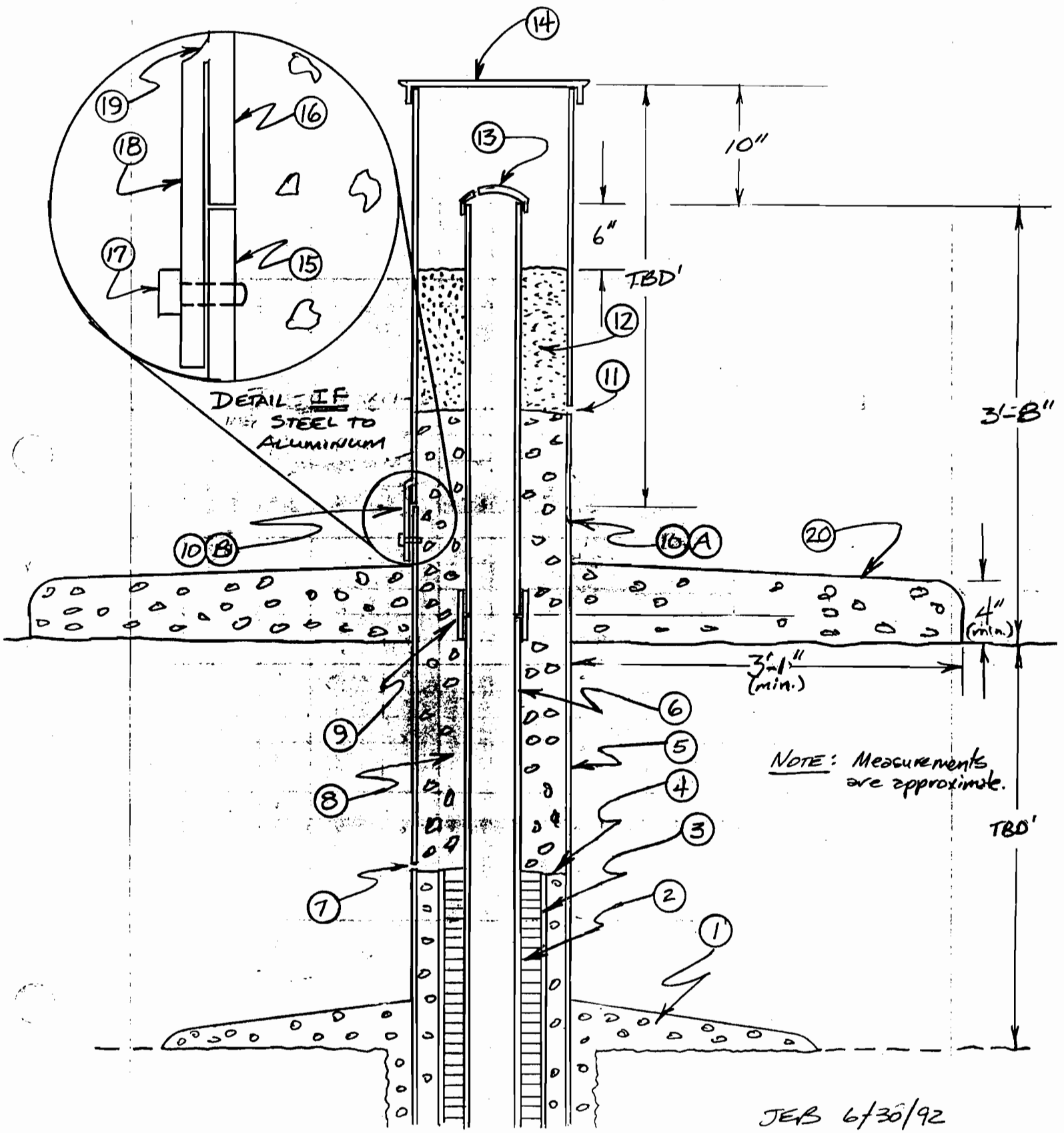
553	555	Basalt, blk w/green claystone
555	559	Basalt, blk vesicular
559	590	Basalt, blk
590	592	Basalt, blk, vesicular
592	626	Basalt, blk, fractured
626	646	Basalt, blk, soft
646	666	Basalt, blk w/green claystone, soft
666	670	Basalt, blk w/green claystone
670	678	Basalt, gray w/green claystone
678	690	Basalt, gray w/green claystone, hard
690	745	Basalt, blk, med-hard
745	760	Basalt, gray, med-hard
760	762	Basalt, blk, med-hard
762	785	Basalt, blk, med-hard, fractured
785	840	Basalt, gray, hard, fractured
840	847	Basalt, blk, soft, vesicular & fractured
847	848	Basalt, blk, med, vesicular, fractured
848	852	Basalt, blk, med, fractured w/claystone
852	855	Basalt, brown & blk, med, vesicular
855	860	Basalt, blk, med, vesicular
860	862	Basalt, blk, broken, med
862	873	Basalt, blk, med-hard, fractured
873	887	Basalt, blk & red, med-soft, fractured, vesicular
887	901	Basalt, blk, med-hard, fractured w/claystone
901	907	Basalt, blk, soft, vesicular, broken
907	917	Basalt, blk, med-hard, fractured
917	924	Basalt, gray, hard
924	929	Basalt, blk, med-hard, fractured
929	936	Basalt, gray, hard
936	945	Basalt, blk, med, ves, broken, some med gray clay
945	954	Basalt, blk, med-hard, vesicular
954	966	Basalt, gray, hard, fractured
966	967	Basalt, blk, hard, fractured
967	979	Basalt, blk, med-hard, fractured
979	987	Basalt, gray, hard
987	992	Basalt, blk, med-hard, fractured
992	1008	Basalt, gray, hard, fractured
1008	1015	Basalt, gray, hard w/brown streaks, fractured
1015	1052	Basalt, gray, fractured
1052	1056	Basalt, vesicular, blk
1056	1060	Basalt, vesicular, multi-colored blk, brown, red
1060	1110	Basalt, gray, med-hard
1110	1145	Basalt, gray, med-hard, frac, very rough drilling
1145	1182	Basalt, blk & gray, soft, vesicular
1182	1206	Basalt, blk & gray


City of Hermiston – New Well No. 2
7/7/92
20" casing
24" casing
ground surface - 0'
proposed cement grout
cut in 24" casing @ 34'
bottom of 24" casing & shoe @ 45'
SWL - 95'
SWL in annulus is 94'
top of pea gravel @ 152'
20" PS SS screen 190'-200'
pea gravel
20" PS SS screen 260'-270'
bottom of pea gravel, top of grout @ 470'
cement grout
bottom of 23" Ø borehole & grout @ 521'
14 3/4" Ø open hole
1206'

CHEMICAL WASTE MANAGEMENT OF THE NORTHWEST, INC.
ARLINGTON, OREGON

EXTENSION OF POST-1986 WELL WITH ALUMINUM OR STEEL PROTECTIVE CASING

TYPICAL CROSS-SECTIONAL VIEW
(NOT TO SCALE)



JEB 6/30/92

CWMNW
Arlington, Oregon
Extension of Post-1986 Well with Aluminum Protective Casing

Descriptions

(1) Previous concrete apron.

(2) Bentonite-Cement Grout (4% Bentonite).

(3) 8-inch Diameter Secondary Steel Casing.

(4) Previous concrete level.

(5) 10-inch Diameter Anodized Aluminum or Carbon-Steel Protective Casing

(6) 4-or-5-inch Diameter PVC Casing.

(7) 1/4-inch Diameter Weep Hole.

(8) No. 8 Sand Removed and Concrete Added.

(9) Compression Coupler.

(10A) If Steel Protective Casing, 10-inch diam. steel extension is welded (three passes)

(10B) If Aluminum Protective Casing, 10-inch diam. Steel extension is Coupled (See Detail)

(11) 1/4-inch Diameter Weep Hole.

(12) No. 8 Silica Sand or "Pea" gravel

(13) Vented PVC slip Cap or Pump Seal.

(14) Locking Protective Casing Lid.

(15) Aluminum or Steel Protective Casing (10-inch diameter)

(16) Steel Protective Casing.

(17) Bolt

(18) Steel Coupler

(19) Weld (Three passes)

NOTE: If 10-inch Diameter Protective Steel Casing, eliminate bolt and coupler. Extension will be welded in three passes directly to existing casing.

(20) Concrete Apron:
- at least 7-foot diameter,
- approximately 8 inches thick at 10-inch protective casing and sloped to thickness of 4 inches at least 2' at outside edge, and
- finished with rough surface and 2-inch radius, rounded edge.

JEB 6/30/92