

APPENDIX A
GROUNDWATER SUPPLY REPORT

Associated Earth Sciences, Inc.



Celebrating 25 Years of Service

Technical Memorandum

Date: July 16, 2009

To: Mr. Richard Weinman
Weinman Consulting, LLC
9350 SE 68th Street
Mercer Island, Washington 98040

Project Name: Desert Claim
Wind Power

From: Michael S. August
Curtis J. Koger, P.G., P.E.G., P.Hg. *CKK*

Project No: KG030316F

Subject: Location of Ground Water Users Within or
Adjacent to the Western Expansion Area

Associated Earth Sciences, Inc. (AESI) is pleased to present the results of our ground water users update as a supplemental to our initial services for the "Water Resources" portion of the "Desert Claim Environmental Impact Statement" (EIS), (AESI, 2004). The information was focused on properties located within or adjacent to the revised project area (Western Expansion Area), and was based on records obtained during our review of water well log and water right information from the Washington State Department of Ecology (Ecology).

Ground Water Supply

Location of Ground Water Users Within or Adjacent to the Western Expansion Area

Water well logs obtained from Ecology were reviewed and compiled for the expansion area located west of the original Desert Claim project site. Specifically, the expanded search area included Sections 18, 19, the northern half of Section 30 of Township 19N, Range 18E, and the northeast quarter of Section 25 of Township 19N, Range 17E, and Sections 12, 13, 24, and 36 of Township 19N, Range 17E. The wells were located to the nearest quarter-quarter section, or by address when available, and a database was created to compile and retrieve pertinent drilling and well construction information. The well locations are shown on Figure 1, "Water Well Location Map."

Based on the tools and methods used by the sources reporting the well logs and the standard practice of reporting well locations only to the nearest quarter-quarter section, the locations shown on Figure 1 should not be considered highly precise; location inaccuracies in the well logs are relatively common. Figure 1 shows both the original project limits and the current project boundaries.

Identified Water Wells

No water well logs were identified from Ecology's database within Sections 18, 19, or the northern half of Section 30 of Township 19N, Range 18E, nor were any wells identified in Sections 12, 13, 24, or 36 of Township 19N, Range 17E. Five wells were identified west of the expansion area (NE quarter of Section 25 of Township 19N, Range 17E) in the northwest quarter of Section 25 of Township 19N, Range 17E. All five wells are used for single-family domestic use (according to well logs and water rights claims). Copies of the water well logs are included as an attachment to this technical memorandum.

As reported in the Final EIS for the initial project site, a study of the hydrology of Kittitas Valley and a review of well logs for this study indicate that well yields average 20 to 23 gallons per minute (gpm) in the Desert Claim project vicinity (Owens, 1995). The study concludes that ground water yield and flow in the Kittitas Valley is largely dependent on stratigraphic and structural controls and high well yields do not necessarily correlate to depth, although average yield increases with depth. Grande Ronde Basalt aquifers tend to produce higher yields than the Ellensburg Formation aquifers, probably because Grande Ronde Basalt aquifers are generally confined and have a larger recharge area in the mountains north and south of Kittitas Valley (Owens, 1995).

Drilled depths of the five wells ranged from 125 to 380 feet. Static water levels ranged from 40 to 65 feet below ground surface (bgs), except in well 171, which had a reported water level of 270 feet bgs. Based on the driller's description and well yield data, it appears likely wells 170 and 171 are completed in bedrock. Wells 167 through 169 are interpreted to be completed in Pleistocene sediments. This interpretation is consistent with the geologic and hydrogeologic information presented in the EIS.

Domestic water wells may use up to 5,000 gallons per day (gpd) of water as allowed by Ecology for exempt wells. However, Ecology estimates that typical use for a single-family home is about 300 gpd (AESI 2004). Assuming typical water use, the 5 existing domestic wells adjacent to the Western Expansion Area withdraw approximately 1,500 gpd of water. All of the homes in the area use on-site septic systems to discharge waste water; therefore, a large portion of the water used is returned to the shallow subsurface.

Water Well Log Database Update

AESI has updated the Final EIS "Water Well Log Database" to include information obtained during our data review. Ground water user data, including owner information, ground surface elevation, total depth, and water level records, and other relevant information are summarized in the attached Table I, "Water Well Database."

Review of Water Right Information

Water rights data obtained from Ecology indicate that there are three records pertaining to active water rights within the proposed Western Expansion Area. The water right information describes

two wells and one spring owned by Pat Burke. Based on Ecology's records, the wells and the spring are located in the western portion of the expanded site area. One well is located in Section 25 of Township 19N, Range 17E, while a spring and a well are located within Section 30 of Township 19N, Range 18E. According to Ecology's records, the spring well is utilized for stock watering and irrigation, while the two wells are categorized as irrigation and general domestic use. No water well logs were identified for the wells and spring during our search of Ecology's water well log database. Available water right information is included in the attached Table II, "Water Right Information."

Environmental Impacts of the Proposed Action

This section briefly summarizes the geology and potential environmental impacts to ground water resources from the proposed Western Expansion Area. Excerpts from the Desert Claim Wind Power Final EIS are presented in the following sections for reference.

Desert Claim Project Area Geology (3.1.1.3)

"Geologic conditions of the Desert Claim project area were evaluated using data obtained from field explorations by Associated Earth Sciences, Inc. (AESI) and AESI's review of regional geologic maps and publications...[d]etailed exploration logs documenting the findings of the field studies are available for review from Kittitas County.

The surficial geology of the project area consists of Recent-age postglacial alluvial fans and other stream deposits that overlie and carve into older Pleistocene-age sidestream glacial outwash (Kittitas Drift) and Pliocene-age sidestream alluvium (Thorp Gravel). Erosion by the younger streams has carved distinct terraces in the older deposits. Miocene-age Grande Ronde Basalt underlies the sediments described above and the entire project area."

Ground Water Supply (3.3.2.2)

"A limited amount of ground water would be needed for long-term operation of the project. This would be provided either by a participating landowner or through development of an exempt well, per the Washington State Water Code, Chapter 90.03 RCW. Less than 5,000 gpd would be extracted for domestic use for the O&M building, as allowed by Ecology for an exempt well. Restroom and kitchen facilities would drain into an on-site septic system, recharging the ground water in the vicinity of extraction. No quantifiable impacts to ground water supply would result from this usage."

Ground Water Conclusions (3.3.2.2)

"Potential impacts to ground water from the proposed project include disruption to ground water flow, recharge, or discharge, depletion of ground water supply, or lowering of ground water quality. Impervious surfaces would be created by the project, but they are limited in size and extent across the project area and are expected to have minimal impacts to recharge, discharge or ground water flow if recommended mitigations are followed. Impacts to ground water supply are not

not expected from the proposed project. Localized impacts to ground water quality are possible from wastewater and petroleum product spills, but can be avoided if recommended mitigations are followed. Minor short-term turbidity due to water level fluctuations in wells from blasting vibration is a potential water quality impact, but would be minimized by following the applicable regulations. Overall, the project is not expected to result in the potential for significant adverse impacts to ground water flow, recharge or discharge, ground water supply or ground water quality.”

Summary

The review of water well logs and water rights information has revealed no new potential impacts to ground water supply or resources within or adjacent to the Western Expansion Area. Therefore consistent with the findings and conclusions presented in the Desert Claim Wind Power Final EIS, it is our professional opinion that the current project is not expected to result in any impacts to ground water supply or resources within or adjacent to the Western Expansion Area.

Attachments: Table I: Water Well Database
Table II: Water Right Information
Figure 1: Water Well Location Map
Water Well Logs

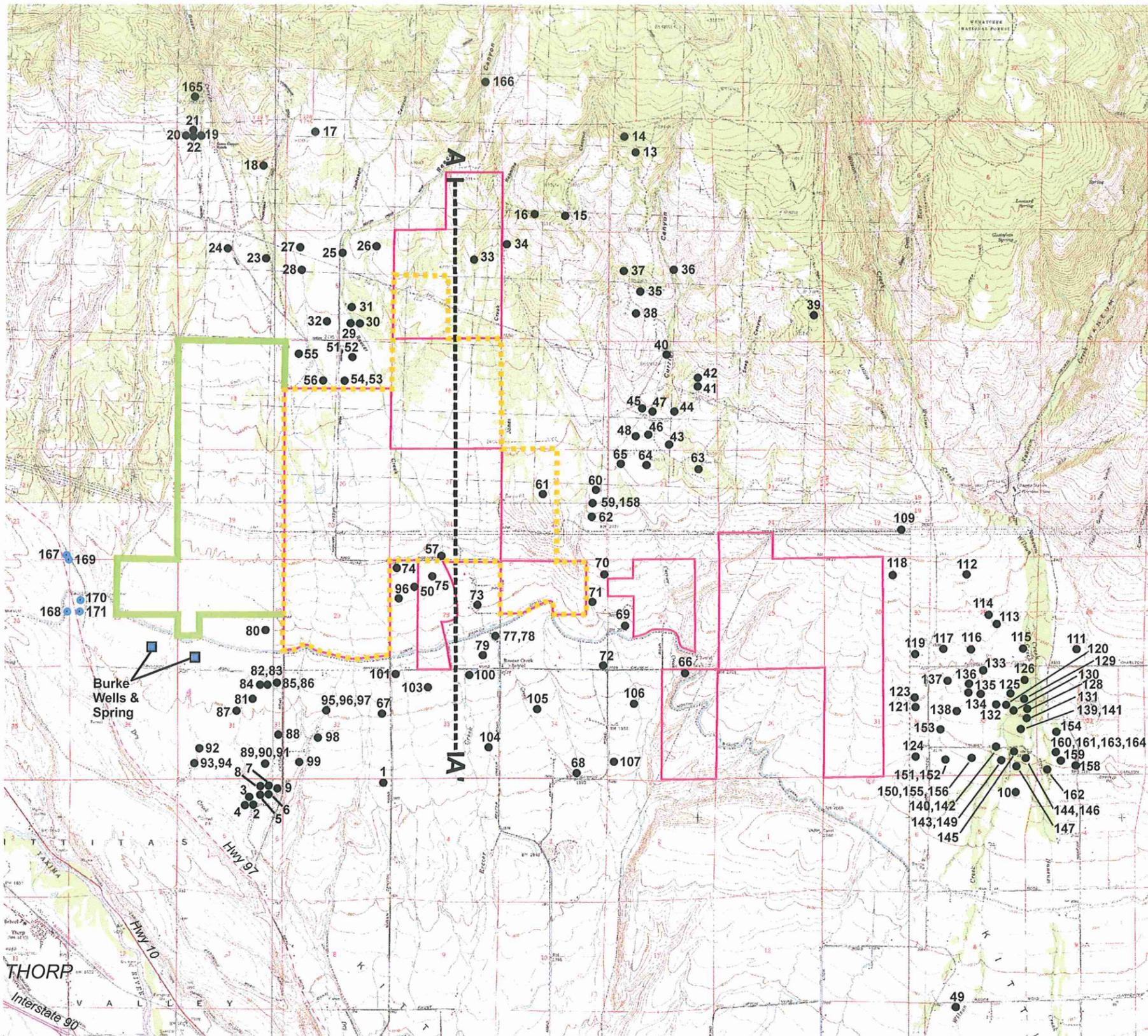
Table I. Water Well Database

Well ID	Owner's Name		Date Completed	Log Avail?	USE	GS Elev.	Total Depth	Well Depth	Static WL	WL Elev.	Aquifer Test		
	First	Last									Q (gpm)	s (ft)	t (hr)
19/17/25/D167	Fred	Norman	11/3/95	Y	Dom	2090	165	165	60	2030	8		1
19/17/25/D168	Gerard	Wanechuck	4/20/00	Y	Dom	2080	210	210	65	2015	17		2
19/17/25/D169	Glenn	Parker	3/15/06	Y	Dom	2090	125	125	40	2050	11	120	1
19/17/25/D170	Paula	Hake	4/27/94	Y	Dom	2060	300	290	40	2020	3	295	1
19/17/25/D171	Rob	Grossman	6/20/00	Y	Dom	2050	380	318	270	1780	1	270	2

Table II. Water Right Information

File #	Owner	Status	Doc	Purpose	County	TRS	Source
G4-300075CL	Burke, Pat	Active	Claim	IR,DG	KITTITAS	19.0N 17.0E 25	Well
G4-097559CL	Burke, Pat	Active	Claim Long	ST,IR	KITTITAS	19.0N 18.0E 30	Spring
G4-300074CL	Burke, Pat	Active	Claim	IR,DG	KITTITAS	19.0N 18.0E 30	Well

Purpose - IR=Irrigation, DG=Domestic General, ST=Stock Watering



LEGEND

168 ● Approximate location of newly identified water well, well locations based on 1/4-1/4 section description or address

1 ● Approximate location of water well, well locations based on 1/4-1/4 section description or address

Western Expansion Area

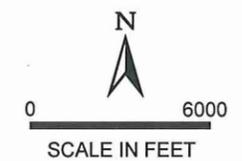
Current Project Area

Original Project Area

Cross Section location

03316 desert claim wind power03316-overall_expansion.cdr page1 landscape 11x17

REFERENCE: TOPO MAP FROM DELORME.



Associated Earth Sciences, Inc.



DATE 6/09
PROJ. NO. KG030316F

**DESERT CLAIM WIND POWER
KITITAS COUNTY, WASHINGTON**

**Figure 1
Water Well Location Map**

WATER WELL REPORT

Start Card No. W064312
Unique Well I.D. # ARX024
Water Right Permit No.

STATE OF WASHINGTON

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

(1) OWNER: Name **NORMAN, FRED** Address **1061 POTCHO LN. ELLENSBURG, WA 98926-**
(2) LOCATION OF WELL: County **KITTITAS** - NW 1/4 NW 1/4 Sec 25 T 19 N., R 17 W
(2a) STREET ADDRESS OF WELL (or nearest address) **PARCEL#19-17-2520-0010-00,**

(3) PROPOSED USE: **DOMESTIC**

(10) WELL LOG

(4) TYPE OF WORK: Owner's Number of well
(If more than one)
NEW WELL Method: **ROTARY**

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change in formation.

(5) DIMENSIONS: Diameter of well **6** inches
Drilled **165** ft. Depth of completed well **165** ft.

MATERIAL	FROM	TO
HARD LOAM	0	2
HARD CEMENTED GRAVEL	2	27
CEMENTED GRAVEL BOULDERS	27	69
CEMENTED GRAVEL CLAY	69	97
SANDY CEMENTED GRAVEL	97	165

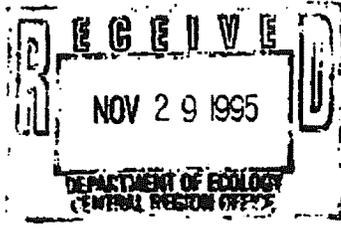
(6) CONSTRUCTION DETAILS:
Casing installed: **6** " Dia. from **+2** ft. to **105** ft.
STL CAS/PVC **4** " Dia. from **-5** ft. to **105** ft.
" Dia. from ft. to ft.

Perforations: **YES**
Type of perforator used **SKILL SAW**
SIZE of perforations **1/8** in. by **6** in.
102 perforations from **145** ft. to **165** ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: **NO**
Manufacturer's Name
Type Model No.
Diam. slot size from ft. to ft.
Diam. slot size from ft. to ft.

Gravel packed: **NO** Size of gravel
Gravel placed from ft. to ft.

Surface seal: **YES** To what depth? **18** ft.
Material used in seal **BENTONITE**
Did any strata contain unusable water? **NO**
Type of water? Depth of strata ft.
Method of sealing strata off **OVERBORE**



(7) PUMP: Manufacturer's Name
Type H.P.

Work started **11/02/95** Completed **11/03/95**

(8) WATER LEVELS: Land-surface elevation
above mean sea level ... ft.
Static level **60** ft. below top of well Date **11/03/95**
Artesian Pressure lbs. per square inch Date
Artesian water controlled by

(9) WELL TESTS: Drawdown is amount water level is lowered below static level.
Was a pump test made? **NO** If yes, by whom?
Yield: gal./min with ft. drawdown after hrs.

WELL CONSTRUCTOR CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Recovery data
Time Water Level Time Water Level Time Water Level

NAME **PODEROSA DRILLING**
(Person, firm, or corporation) (Type or print)

Date of test **11**
Bailer test gal./min. ft. drawdown after hrs.
Air test **7-9** gal./min. w/ stem set at ft. for **1** hrs.
Artesian flow g.p.w. Date
Temperature of water Was a chemical analysis made? **NO**

ADDRESS **2-6010 BROADWAY**
[SIGNED] *[Signature]* License No. **2060**
Contractor's
Registration No. **PO-WD-BI*248JE** Date **11/06/95**

File Original with
Department of Ecology
Second Copy - Owner's Copy
Third Copy - Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent W123585
UNIQUE WELL I.D.# AFH 483
Water Right Permit No. _____

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

(1) OWNER: Name Ronald Waneche K Address 620 Clark Rd Ellensburg
(2) LOCATION OF WELL: County Kittitas SW 1/4 SW 1/4 Sec 25 T 19 N.R. 17E WM
(2a) STREET ADDRESS OF WELL: (or nearest address) Hwy 97
TAX PARCEL NO.: _____ N

(3) PROPOSED USE: Domestic Industrial Municipal
 Irrigation Test Well Other
 DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) _____
 New Well Method: Dug Bored
 Deepened Cable Driven
 Reconditioned Rotary Jetted
 Decommission

(5) DIMENSIONS: Diameter of well 6 inches
Drilled 210 feet. Depth of completed well 210 feet.

(6) CONSTRUCTION DETAILS
Casing installed:
 Welded 6 : Diam. from 12 ft. to 198 ft.
 Liner installed : Diam. from _____ ft. to _____ ft.
 Threaded : Diam. from _____ ft. to _____ ft.

Perforations: Yes No
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes No K-Pac Location _____
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot Size _____ from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: Yes No Size of gravel/sand _____
Material placed from _____ ft. to _____ ft.

Surface seal: Yes No To what depth? 20 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

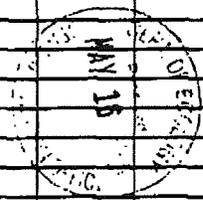
(8) WATER LEVELS: Land surface elevation above mean sea level _____ ft.
Static level 65 ft. below top of well Date 4/20/00
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) 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.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)
Time Water Level Time Water Level Time Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 17 gal./min. with 0 ft. drawdown after 2 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes No

(10) WELL LOG or DECOMMISSIONING PROCEDURE DESCRIPTION
Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. Indicate all water encountered.

MATERIAL	FROM	TO
Top Soil	0	2
Cemented gravel	2	11
Brown Clay & gravel	11	138
gravel & water	138	148
5-6 gpm		
Brown Clay & gravel	148	198
Soft Sand Stone & water	198	210



Work Started 4/18 00 Completed 4/20 00

WELL CONSTRUCTION CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.
Type or Print Name Mitch Mathes License No. 1267
(Licensed Driller/Engineer)
Trainee Name _____ License No. _____
Drilling Company MATHES Drilling
(Signed) Mitch Mathes License No. 1267
(Licensed Driller/Engineer)
Address 2317 Rd 1012 NE Moses Lake
Contractor's Registration No. MATHES 117664/20 00
(USE ADDITIONAL SHEETS IF NECESSARY)

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (360) 407-8600. The TDD number is (360) 407-6006.

Please print, sign and return to the Department of Ecology



Water Well Report

Original - Ecology, 1st copy - owner, 2nd copy - driller

Construction/Decommission

Construction
 Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

PROPOSED USE: Domestic Industrial Municipal
 DeWater Irrigation Test Well Other _____

TYPE OF WORK: Owner's number of well (if more than one) _____
 New well Reconditioned *Method:* Dug Bored Driven
 Deepened Cable Rotary Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 125 ft.
 Depth of completed well 125 ft.

CONSTRUCTION DETAILS
 Casing Welded 6 " Diam. from 17 ft. to 83 ft.
 Installed: Liner installed 4 " Diam. from -13 ft. to 125 ft.
 Threaded " Diam. from _____ ft. to _____ ft.

Perforations: Yes No
 Type of perforator used skill saw
 SIZE of perfs 7 in. by 2 in. and no. of perfs 200 from 85 ft. to 125 ft.

Screens: Yes No K-Pac Location _____
 Manufacturer's Name _____
 Type _____ Model No. _____
 Diam. _____ Slot size _____ from _____ ft. to _____ ft.
 Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: Yes No Size of gravel/sand _____
 Materials placed from _____ ft. to _____ ft.

Surface Seal: Yes No To what depth? 22 ft.
 Material used in seal Bentonite
 Did any strata contain unusable water? Yes No
 Type of water? _____ Depth of strata _____
 Method of sealing strata off _____

PUMP: Manufacturer's Name _____ H.P. _____
 Type: _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
 Static level 40 ft. below top of well Date 3-15-06
 Artesian pressure _____ lbs. per square inch Date _____
 Artesian water is controlled by _____ (cap, valve, etc.)

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.
 Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
 Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Date of test _____
 Bailor test _____ gal./min. with _____ ft. drawdown after _____ hrs.
 Airtest 11 gal./min. with stem set at 120 ft. for 1 hrs.
 Artesian flow _____ g.p.m. Date _____
 Temperature of water _____ Was a chemical analysis made? Yes No

Current Notice of Intent No. W170957

Unique Ecology Well ID Tag No. ALF 393

Water Right Permit No. D

Property Owner Name Allen Parker

Well Street Address Nacho Lane

City Ell. Bellewa

Location NW 1/4-1/4 MW 165419 17 EWM or WWM circle one

Lat/Long (s, t, r) Lat Deg 25 Lat Min/Sec _____

still REQUIRED) Long Deg _____ Long Min/Sec _____

Tax Parcel No. 1917950200008

CONSTRUCTION OR DECOMMISSION PROCEDURE
 Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information indicate all water encountered. (USE ADDITIONAL SHEETS, IF NECESSARY.)

MATERIAL	FROM	TO
<u>top soil</u>	<u>0</u>	<u>2</u>
<u>Brown coble</u>	<u>2</u>	<u>12</u>
<u>Brown gravel Hard</u>	<u>12</u>	<u>45</u>
<u>Brown gravel 1:1:1 clay</u>	<u>45</u>	<u>75</u>
<u>Brown gravel + sandstone</u>	<u>75</u>	<u>105</u>
<u>Brown gravel + water</u>	<u>105</u>	<u>125</u>

Only pump clean 9-10 gal/min.

DEPT. OF ECOLOGY Received APR 03 2006 CENTRAL REGION OFFICE

DEPT. OF ECOLOGY Received APR 18 2006 CENTRAL REGION OFFICE

Start Date 3-14-06 Completed Date 3-15-06

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Driller/Engineer/Trainee Name (Print) Mike Morefield
 Driller/Engineer/Trainee Signature Mike Morefield
 Driller or trainee License No. 2361

Drilling Company Waterman Well Drilling
 Address 10604 24th
 City, State, Zip Seattle WA 98142
 Contractor's Registration No. WATERW0022183/22/04

IF TRAINEE, Driller's Licensed No. _____
 Driller's Signature _____

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

WATER WELL REPORT

Start Card No. W36927

STATE OF WASHINGTON

Unique Well I.D. #
Water Right Permit No.

(1) OWNER: Name **HAKE, PAULA D.** Address **P.O. BOX 125 ELLENSBURG, WA 98926-**

(2) LOCATION OF WELL: County **KITTITAS** - **SW 1/4 NW 1/4 Sec 25 T 19 N. R 17 NW**

(2a) STREET ADDRESS OF WELL (or nearest address):

(3) PROPOSED USE: **DOMESTIC**

(10) WELL LOG

(4) TYPE OF WORK: Owner's Number of well (if more than one) **1**
NEW WELL Methods **ROTARY**

Formations: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change in formation.

(5) DIMENSIONS: Diameter of well **6** inches
Drilled **300** ft. Depth of completed well **290** ft.

MATERIAL	FROM	TO
SILT	0	3
SAND GRAVEL CLAY	3	11
SAND GRAVEL	11	20
CEMENTED SAND GRAVEL	20	60
SAND GRAVEL CLAY	60	75
SAND GRAVEL WITH WATER	75	113
CEMENTED SAND GRAVEL	113	125
SAND GRAVEL WITH WATER	125	135
CEMENTED SAND GRAVEL	135	176
SAND GRAVEL WITH WATER	176	180
CEMENTED SAND GRAVEL	180	220
SANDY CLAY	220	245
SANDSTONE	245	269
SANDSTONE WITH WATER	269	275
SANDSTONE	275	300

(6) CONSTRUCTION DETAILS:
Casing installed: **6** " Dia. from **+2** ft. to **176** ft.
WELDED **4** " Dia. from **-5** ft. to **290** ft.
" Dia. from ft. to ft.

Perforations: **YES**
Type of perforator used **SKILL SAW**
SIZE of perforations **1/4** in. by **7** in.
30 perforations from **100** ft. to **200** ft.
30 perforations from **270** ft. to **290** ft.
perforations from ft. to ft.

Screens: **NO**
Manufacturer's Name
Type Model No.
Diam. slot size from ft. to ft.
Diam. slot size from ft. to ft.

Gravel packed: **NO** Size of gravel
Gravel placed from ft. to ft.

Surface seal: **YES** To what depth? **10** ft.
Material used in seal **BENTONITE**
Did any strata contain unusable water? **NO**
Type of water? Depth of strata ft.
Method of sealing strata off **OVERBORE**

(7) PUMP: Manufacturer's Name Type H.P.

(8) WATER LEVELS: Land-surface elevation
Static level **40** ft. above mean sea level ... ft. Date **04/27/94**
Artesian Pressure lbs. per square inch Date
Artesian water controlled by

Work started **04/21/94** Completed **04/27/94**

(9) WELL TESTS: Drawdown is amount water level is lowered below static level.
Has a pump test made? **NO** If yes, by whom?
Yield: gal./min with ft. drawdown after hrs.

WELL CONSTRUCTOR CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Recovery data
Time Water Level Time Water Level Time Water Level

NAME **PONDEROSA DRILLING**
(Person, firm, or corporation) (Type or print)

ADDRESS **E 6010 BROADWAY**

Date of test **/ /**
Bailer test gal/min. ft. drawdown after hrs.
Air test **3** gal/min. w/ stem set at **295** ft. for **1** hrs.
Artesian flow g.p.s. Date
Temperature of water Was a chemical analysis made? **NO**

SIGNED:  License No. **1544**
Contractor's Registration No. **PD-ND-EI4248JE** Date **04/29/94**

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original with Department of Ecology
Second Copy - Owner's Copy
Third Copy - Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent W 123592
UNIQUE WELL I.D.# AFH 492
Water Right Permit No. _____

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

(1) OWNER: Name Rod Crossman Address 2402 Hannah Rd Ellensburg
(2) LOCATION OF WELL: County Kittitas SW 1/4 ALW 1/4 Sec 25 T 19 N.R. 17E WM
(2a) STREET ADDRESS OF WELL: (or nearest address) Hwy 97
TAX PARCEL NO.: _____ E

(3) PROPOSED USE: Domestic Industrial Municipal
 Irrigation Test Well Other
 DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) _____
 New Well Method: Dug Bored
 Deepened Cable Driven
 Reconditioned Rotary Jetted
 Decommission

(5) DIMENSIONS: Diameter of well 6 inches
Drilled 380 feet. Depth of completed well _____ ft.

(6) CONSTRUCTION DETAILS
Casing Installed:
 Welded 6 Diam. from +2 ft. to 318 ft.
 Liner installed 6 Diam. from +2 ft. to 290 ft.
 Threaded _____ Diam. from _____ ft. to _____ ft.

Perforations: Yes No
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes No K-Pac Location _____
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot Size _____ from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: Yes No Size of gravel/sand _____
Material placed from _____ ft. to _____ ft.

Surface seal: Yes No To what depth? 35
Material used in seal Bentone
Did any strata contain unusable water? Yes No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 270 ft. below top of well Date _____
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) 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.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)
Time Water Level Time Water Level Time Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 1 gal./min. with 270 ft. drawdown after 2 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes No

(10) WELL LOG or DECOMMISSIONING PROCEDURE DESCRIPTION
Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. Indicate all water encountered.

MATERIAL	FROM	TO
TOP Soil	0	4
Brown Clay & gravel	4	82
Sandy Clay & water (1/2 GPM)	82	86
Sticky Brown Clay	86	147
gray Clay & gravel	147	206
gray Sand Stone	206	232
Sand & water about (1 GPM)	232	236
gray clay & gravel	236	257
Gravel & Sand	257	275
Sand Stone	275	297
gray Clay & Sand	297	380

Work Started 6/10 00 Completed 6/20 00

WELL CONSTRUCTION CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Type or Print Name Mitch Mathews License No. 1267
(Licensed Driller/Engineer)

Trainee Name _____ License No. _____
Drilling Company MATHews Drilling

(Signed) Mitch Mathews License No. 1267
(Licensed Driller/Engineer)

Address 2317 R 1012 NE M.L. Wa
Contractor's Registration No. MATH-EX117B Date 6/26 00

(USE ADDITIONAL SHEETS IF NECESSARY)

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (360) 407-6600. The TDD number is (360) 407-6006.