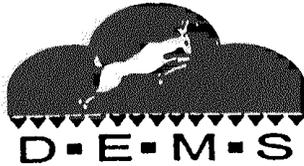


## Appendix C

Monitoring Well

Development Logs



MONITORING WELL DEVELOPMENT/PURGING LOG

WELL NO.: MW 06

DATE: 09-04-01 - 09-05-01

Depth from Top of Casing:

Top of water (ft) 25.05 - 2.53 = 22.54 bgs  
 Bottom of well (ft) 33.83 - 2.53 = 31.30 bgs  
 Well diameter (in) 2

Top, sampling interval:           
 Bottom, sampling interval           
 $V = 0.0408 \times \Delta H \text{ (ft)} \times D \text{ (in)}^2$  1.43 (gal)  
 $3 \times V =$  24.24 (gal)

Well volume in Filter pack 6.65.  
 Total well volume 6.65 - 1.43 = 8.08 gallons

Well Development Technique:

Pumping with 12 volt electric pump  
Did not surge - well volume very low - top of water below top of screen

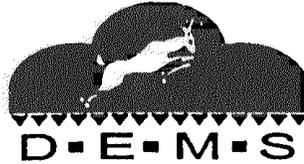
Groundwater Parameters

TIME	VOLUME (Gal)	TURBIDITY (±10.0%)	S.C. (±3.0%)	D.O. (±10.0%)	TEMP. (±0.5°C)	pH (±0.1%)
	<u>+9 gal From 09-04-01</u>					
10:17	11.5	71.4	396	}	21.7	7.02
10:22	18	47.0	400		21.1	6.94
10:27	20.5	4.72	401		20.8	6.96
10:36	27	6.24	401		21.1	7.04
10:42	29	1.57	405		20.7	7.03
10:47	31.5	1.19	401		20.9	7.07
10:51	34	1.60	403		20.9	7.08
10:55	36	1.15	404		20.8	7.08

NOTES:

When first opened well was not under pressure or vacuum. PID reading 0.00 PPM. 09-04-01 Recovered 9 gallons - well did not pump dry. First flow very cloudy - clearing at end of pumping. Top of water on 09-05-01 25.11 (From top of casing). Well did not pump dry.

Development/Purging Oversight: Eldon Penn



MONITORING WELL DEVELOPMENT/PURGING LOG

WELL NO.: MW 07

DATE: 09-04-01 —  
09-05-01

Depth from Top of Casing:

Top of water (ft) 16.65 - 2.67 = 13.98 bgs  
 Bottom of well (ft) 26.22 - 2.67 = 23.55 bgs  
 Well diameter (in) 2

Top, sampling interval: \_\_\_\_\_  
 Bottom, sampling interval: \_\_\_\_\_  
 $V = 0.0408 \times \Delta H \text{ (ft)} \times D \text{ (in)}^2$  1.56 (gal)  
 $3 \times V =$  26.49 (gal)

Volume in Filter pack 7.28 gallons  
 Total well volume 7.28 + 1.56 = 8.83 gallons

Well Development Technique:

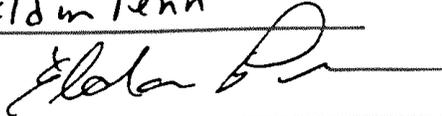
Pumping with 12 volt electric pump.  
Did not surge - well volume very low - top of water below top of screen.

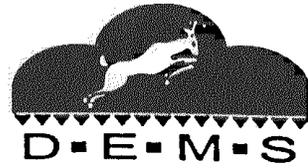
Groundwater Parameters

TIME	VOLUME (Gal)	TURBIDITY (±10.0%)	S.C. (±3.0%)	D.O. (±10.0%)	TEMP. (±0.5°C)	pH (±0.1%)
	<u>+ 9 gal From 09-04-01</u>					
<u>11:24</u>	<u>10</u>	<u>10.02</u>	<u>713</u>		<u>23.1</u>	<u>6.67</u>
<u>11:33</u>	<u>12</u>	<u>82.5</u>	<u>709</u>		<u>23.6</u>	<u>6.87</u>
<u>11:42</u>	<u>13.5</u>	<u>47.5</u>	<u>704</u>		<u>23.3</u>	<u>6.87</u>
<u>11:55</u>	<u>14</u>	<u>27.5</u>	<u>703</u>		<u>23.2</u>	<u>6.83</u>
<u>12:06</u>	<u>14.5</u>	<u>21.6</u>	<u>690</u>		<u>24.9</u>	<u>6.79</u>
<u>12:10</u>	<u>14.75</u>	<u>14.2</u>	<u>699</u>		<u>25</u>	<u>6.78</u>
<u>12:16</u>	<u>15</u>	<u>11.3</u>	<u>700</u>		<u>24.8</u>	<u>6.84</u>

NOTES:

When first opened well not under pressure or vacuum, PID reading 0.00 PPM. 09-04-01 Pumped dry at 2.5 gallons. Slow recharge. Continued until 9 gallons removed. First fluid very cloudy - clearing at the end of pumping. Top of water on 09-05-01 - 16.69. Turbidity erratic probably due to pumping well dry between each parameter check.

Development/Purging Oversight: Eldon Penn  




MONITORING WELL DEVELOPMENT/PURGING LOG

WELL NO.: NAW 08

DATE: 09-05-01

Depth from Top of Casing:

Top of water (ft) 24.48 - 3.03 = 21.45 bgs  
 Bottom of well (ft) 28.03 - 3.03 = 25 bgs  
 Well diameter (in) 2

Top, sampling interval: \_\_\_\_\_  
 Bottom, sampling interval: \_\_\_\_\_  
 $V = 0.0408 \times \Delta H \text{ (ft)} \times D \text{ (in}^2)$  .58 (gal)  
 $3 \times V =$  1.81 (gal)

Volume in Filter pack = 2.78 gallons  
 Total well volume  $2.78 + .58 = 3.27$  gallons

Well Development Technique:

Pumping with 12 volt electric pump.  
Did not surge - well volume very low - top of water below top of screen

Groundwater Parameters

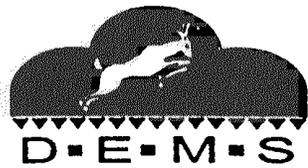
TIME	VOLUME (Gal)	TURBIDITY ( $\pm 10.0\%$ )	S.C. ( $\pm 3.0\%$ )	D.O. ( $\pm 10.0\%$ )	TEMP. ( $\pm 0.5^\circ\text{C}$ )	pH ( $\pm 0.1\%$ )
14:38	1	off scale	686	}	25.8	6.68
14:55	2.5	3.7	686		23.2	6.91
15:00	4.5	9	641		25	6.65
15:45	8	~~~~~	~~~~~		~~~~~	~~~~~
13:30	8.5	10.15	620		22.5	6.77
13:36	9	21.00	616		22.3	6.78
13:43	9.5	12.70	625		21.6	6.79
13:51	10	7.95	629	21.3	6.76	

09-04-01  
  
  
  
  
09-05-01

NOTES:

When first opened well not under pressure or vacuum.  
PID reading 0.00 PPM. 09-04-01 - Well pumped dry at .75 gallons - slow recharge. Took parameter readings to 4.5 gallons removed. pH meter stopped working. Continued removing water until 8 total gallons removed.  
09-05-01 - Top of water 24.49' (From top of casing)

Development/Purging Oversight: Eldon Penn



MONITORING WELL DEVELOPMENT/PURGING LOG

WELL NO.: MW 08

DATE: 09-04-01 - 09-05-01

Depth from Top of Casing:

Top of water (ft) 24.48 - 3.03 = 21.45 bgs  
Bottom of well (ft) 28.03 - 3.03 = 25 bgs  
Well diameter (in) 2

Top, sampling interval: \_\_\_\_\_  
Bottom, sampling interval: \_\_\_\_\_  
 $V = 0.0408 \times \Delta H \text{ (ft)} \times D \text{ (in)}^2$  .58 (gal)  
 $3 \times V =$  9.81 (gal)

Volume in Filter pack = 2.78 gal  
Total well volume 2.78 + .58 = 3.27 gal

Well Development Technique:

Pumping with 12 volt electric pump  
Did not surge - well volume very low - top of water  
below top of screen

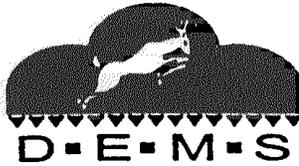
Groundwater Parameters

TIME	VOLUME (Gal)	TURBIDITY ( $\pm 10.0\%$ )	S.C. ( $\pm 3.0\%$ )	D.O. ( $\pm 10.0\%$ )	TEMP. ( $\pm 0.5^\circ\text{C}$ )	pH ( $\pm 0.1\%$ )
13:55	10.5	6.28	631	}	21.5	6.73
14:03	11	5.52	628		21.1	6.76
14:13	12	4.68	629		20.6	6.73
14:18	12.5	5.75	632		20.7	6.79

NOTES:

09-05-01 - Well pumped dry between each parameter reading. Stopped development - recharge slowing down. Parameter had stabilized.

Development/Purging Oversight: Eldon Penn



AM) #7

### MONITORING WELL DEVELOPMENT/PURGING LOG

WELL NO.: MW 09

DATE: 09-05-01  
09-06-01

#### Depth from Top of Casing:

Top of water (ft) 25.47 - 3.40 = 22.07  
Bottom of well (ft) 215.42  
Well diameter (in) 4

Top, sampling interval: \_\_\_\_\_  
Bottom, sampling interval \_\_\_\_\_  
 $V = 0.0408 \times \Delta H \text{ (ft)} \times D \text{ (in)}^2$  124 (gal)  
 $3 \times V =$  390 (gal)

Volume in Filter pack 6.12 gal  
Total well volume 6.12 + 124 = 130.12

#### Well Development Technique:

Three quarter horse power 220 volt electric pump.  
Did not sand bail well. - due to no apparent fill and  
past low recharge rate.

#### Groundwater Parameters

TIME	VOLUME (Gal)	TURBIDITY ( $\pm 10.0\%$ )	S.C. ( $\pm 3.0\%$ )	D.O. ( $\pm 10.0\%$ )	TEMP. ( $\pm 0.5^\circ\text{C}$ )	pH ( $\pm 0.1\%$ )
16:20	30	243	7.19	}	20.8	9.68
16:25	100	495	7.12		20.9	10.76
16:39	135	252	7.07		24.7	10.85
17:07	142	1021	6.97		23.5	10.79
7:43	162	57.8	8.16		19.7	7.23
7:50	182	16.70	8.13		19.6	7.12
7:53	202	7.59	8.07		19.6	7.05
7:59	Well pump dry					

#### NOTES:

When first opened well not under pressure or vacuum.  
PID reading 0.00 PPM. 09-05-01 - Well pumped dry at  
130 gal. Slow recharge rate. Let well recharge over night.  
09-06-01 - Top of water 109.11' (From top of casing). Poor over night  
recharge. Well pumped dry after 70 gallons. No recharge  
after 30 min.

Development/Purging Oversight: Eldon Penn  
Eldon P.