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Provisional

Hudson Bay Aquifer Recharge Testing Project

2005 Annual Report

11/17/2005

Project Team
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November 17, 2005

TO: Hudson Bay District Improvement Company (HBDIC)
Oregon Watershed Enhancement Board (OWEB)
Oregon Water Resources Department (OWRD)
Oregon Department of Environmental Quality (ODEQ)
Oregon Department of Fish and Wildlife (ODFW)
Confederated Tribes of the Umatilla Indian Reservation (CTUIR)
Washington Department of Ecology (WDOE)
Walla Walla Watershed Alliance (WWWA)
Oregon State University: Department of Bio- Engineering

From: Bob Bower, Hydrologist-WWBWC (Principal Author)

RE: 2005 Annual Report: ***Hudson Bay Aquifer Recharge Project.***

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Overview

The Hudson Bay Aquifer Recharge project was designed to test aquifer recharge as a tool to stabilize and restore declining aquifer levels and spring-creek flows in the Walla Walla River valley. This project has been developed as a collaborative effort between the Walla Walla Basin Watershed Council (WWBWC) and Hudson Bay District Improvement Company (HBDIC). Funding, technical-support and permitting has been provided by the Oregon Watershed Enhancement Board (OWEB), Walla Walla Watershed Alliance (NRCS funds), Oregon Water Resources Department (OWRD), Oregon Department of Environmental Quality (ODEQ), Oregon State University Extension, HBDIC and the WWBWC. *In-Situ Inc* also provided a reduction in cost of the monitoring equipment for the project. This report

was generated as outlined in the HBDIC Recharge Project monitoring plan application to OWRD.

The Hudson Bay Aquifer Recharge Project was operated for three separate 'recharge' runs during the fall, winter and spring 2004-5. The project operated for a total of 66 days from December 1st to December 28th 2005, February 2nd to February 3rd 2005, and March 27th to May 2nd 2005. The test project is operated under a Limited License Request (#758) from Oregon Water Resources Department. The conditions and limitation of the permit included: "The use of water from the Walla Walla River shall be limited to 50 cfs for the purpose of testing artificial ground water recharge during a testing season of November 1 through May 15. Water may only be diverted when there is adequate flow in the Walla Walla River to honor all existing water rights. When water is diverted under this limited license, the use is further limited to times when there is, at a minimum, the following stream flows in the Tum a lum reach of the Walla Walla River, between the Little Walla Walla River diversion and Nursery Bridge Dam and flowing past Nursery Bridge Dam: November – 64 cfs, December and January – 95 cfs, February to May 15 – 150 cfs."

The HBDIC Aquifer Recharge Testing Project is operating over a 5 years period as allowed under the OWRD limited license. Management of site operations and monitoring will be adapted to issues and opportunities in each successive recharge season. Project information will be shared as it becomes available.

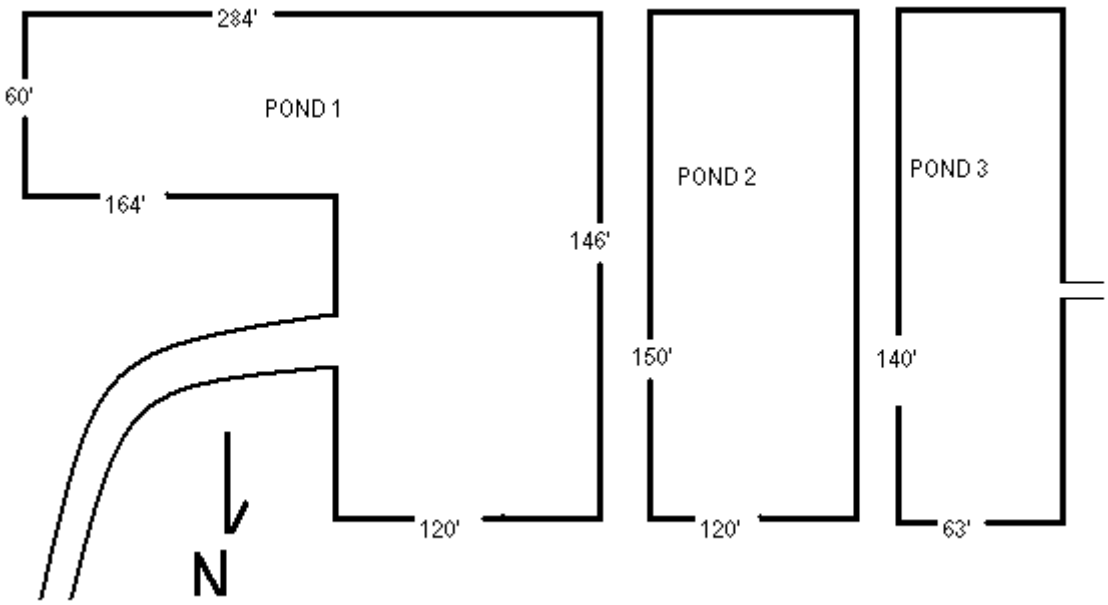
2004-5 Project Timeline:

1. Notice given to OWRD for Recharge Testing Operations on November 24, 2004
2. Operated Recharge project (First of three operation periods) December 1st to December 28th, 2004
3. Water Quality sampling for background bacteria testing. December 1st 2004
4. Water Quality sampling for Intake and Observation Well #1 (SOCs, fecals, physical chemistry) December 8th, 2004
5. Spreading Basins Expansion (HBDIC) January 1st to February 1st, 2005
6. Water Quality sampling for background bacteria testing. January 5 and April 6th, 2005
7. Operated Recharge project (Second of three operation periods) February 2nd to February 3rd, 2005
8. Operated Recharge project (First of three operation periods) March 27th to May 2nd 2005
9. WWBWC Office Well Water Sampling April 14th, 2005
10. Recharge Project shutdown May 15th, 2005
11. Water Quality sampling May 19th, 2005 (OBS-1)
12. HBDIC Annual Technical Advisory Meeting October 26th, 2005

Recharge Test Site Expansion

During this recharge operation season, the project spreading basins were expanded in order to increase the volume of water being recharged. Hudson Bay District Improvement Company expanded the sites from their original sizing (see *Hudson Bay Aquifer Recharge Testing Project: 2004 Annual Report, WWBWC*) of 15,000 square-feet of infiltration area (3 spreading basins of 50' x 100') to more than three times that area (54,764 square-feet). This expanded area is a rough estimate measured by pacing out the new spreading basins areas (see **Figure 1**).

Figure 1. Winter 2005 Spreading Basin Expansion



❖ *Pond and Pit were both originally used to describe the recharge* ***spreading basin****, which is the proper recharge term.*

This expansion was the equivalent of approximate a 3.65 times increase in total infiltration surface area. However, from 2004-5 monitoring information it appears that there was not a parallel increase in the rate of infiltration. Spreading basin infiltration rates were calculated by subtracting the overflow gauge flow (cfs) from the Intake Gauge flow (cfs) (**Figure 2**). The data suggests that the on-site recharge rate went from approximate 14 cfs to around 20-22 cfs, an approximate 50% increase. It is thought that because the basins were widened (relative to the water table gradient) that the water mound from Pond # 1 (**Figure 1**) the two downgradient ponds infiltration rate.

During the 2004-5 operation period it was observed that Pond #1 did accumulate some sediment in the bottom of the intake canal as well as in the spreading basin itself. It is most likely because this area of the project is where the high velocity water of the White Ditch is slowed down, causing suspended particles to drop out of solution. This slowing of the water coupled with the sheer volume of water moving though Pond #1 would explain sediment accumulation even with low turbidity source water. An upside to this happening in Pond#1, it may mean the other spreading basins would get 'treated' water served to them via pond

one, reducing the accumulation of sediment in the other basins as well as in the planned expansion of the infiltration areas.

Another notable consequence of the site expansion was the increase in water table levels in the on-site and distal observation wells. The mound created by recharge also appeared to be closer to the surface than the year prior. There were no negative consequences from neither the site expansion nor the increase in overall infiltration rates observed during or after the operation of the recharge project.

A HBDIC Recharge sign was installed during the expansion process (**Figure 2A**). This sign is intended to provide an on-site outreach tool where the general public and nearby landowners can get more information about the project, its partners and contact information should an issues arise or more information is needed.

Figure 2A. New HBDIC Recharge Project Onsite Sign

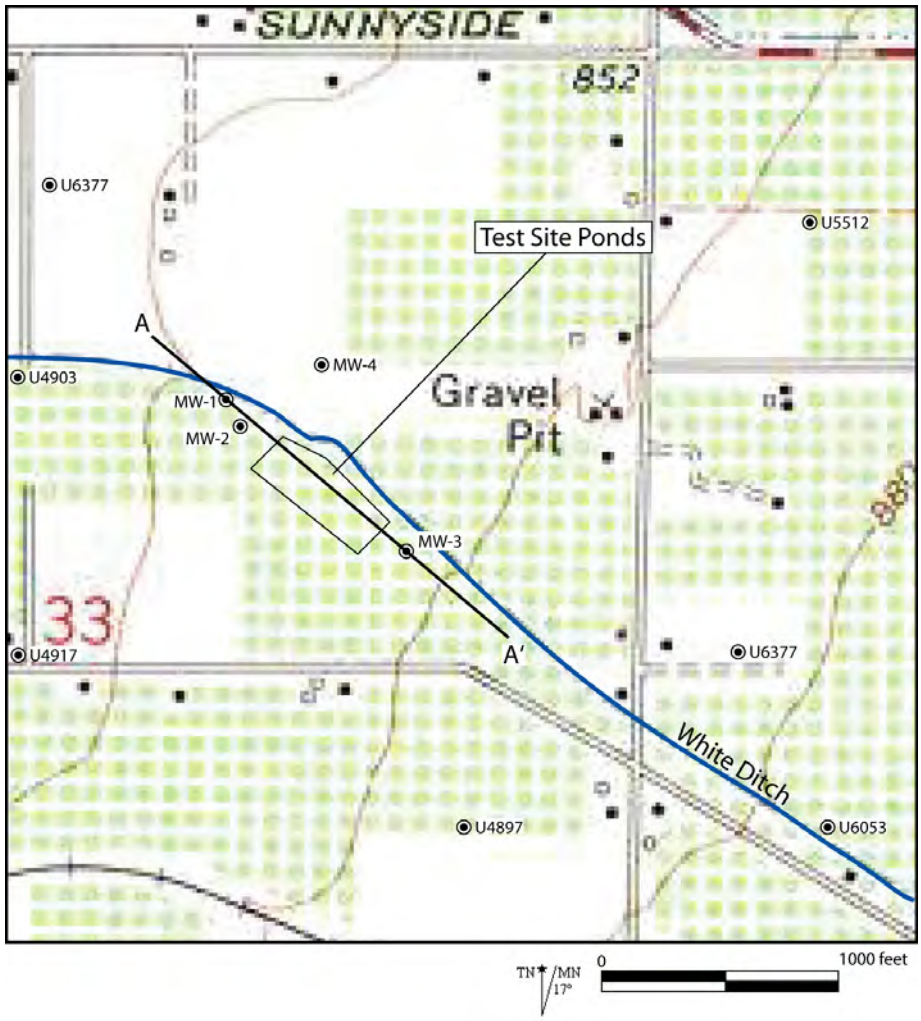
Project Team Members (left to right): John Brough, HBDIC Recharge Project Director and Bob Bower, WWBWC Hydrologist

Test Site Geology

During the spring 2004 site construction, the onsite geology was detailed to consist of "*a thin (0.5 to 4 feet thick) surface layer consisting of unconsolidated, loose, gravelly silty sand. This stratum is interpreted to consist of underlying pebble-cobble gravel and recent (Holocene) wind blown sand and silt mixed together by pedogenic and agricultural activity. The surface deposit rapidly grades downwards into a sequence of uncemented, basaltic, sandy gravel. This basaltic sandy gravel is generally gray to gray black in color and gravel cuttings suggest pebbles and cobbles are the predominant clast sizes. Together this gravel and the overlying gravelly silty sand are interpreted to comprise the Quaternary coarse alluvial gravel unit*" **(Lindsey**

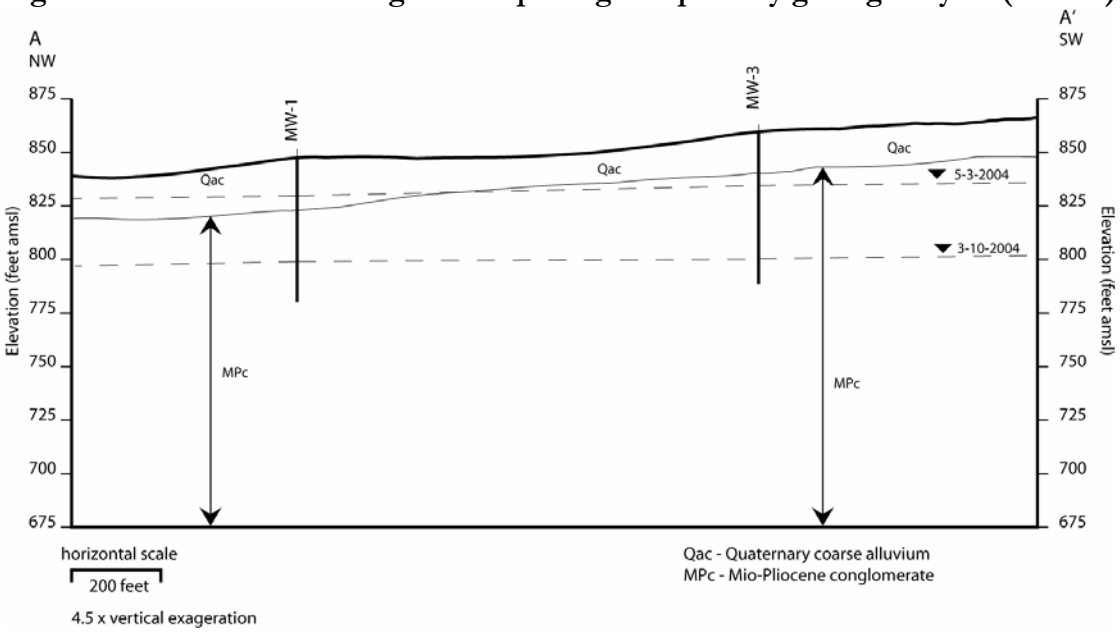
K., Tolan T., 2004). The geological layer below the Quaternary Coarse Alluvium was identified as a Mio-Pliocene Conglomerate which generally consisted of brown and yellow-brown hued pebble and cobble clasts with a notable increase in mud content. **Figures 2B and 3** depict the original work detailing the subsurface geology. Once the upper surface layer was removed during spreading basin construction, the onsite geology was determined to consist of two distinctive layers consisting of the Quaternary Coarse Alluvium (Qac) (ground surface to approximately 20 feet bgs) and the Mio-Pliocene Conglomerate (MPc) (20 feet bgs to >70 feet bgs)[1].

Figure 2B. Geologic Transect at Recharge Site



[1] *Hudson Bay Aquifer Recharge Testing Project: 2004 Annual Report, WWBWC*

Figure 3. Transect of Recharge site depicting two primary geologic layers (A' to A)



During the winter 2005 spreading basin expansion, an observation pit was excavated to allow the monitoring team an even better understanding of the hydrogeologic properties of the subsurface. After photographs were taken of the subsurface the geologic pit was backfilled with the materials that were originally excavated.

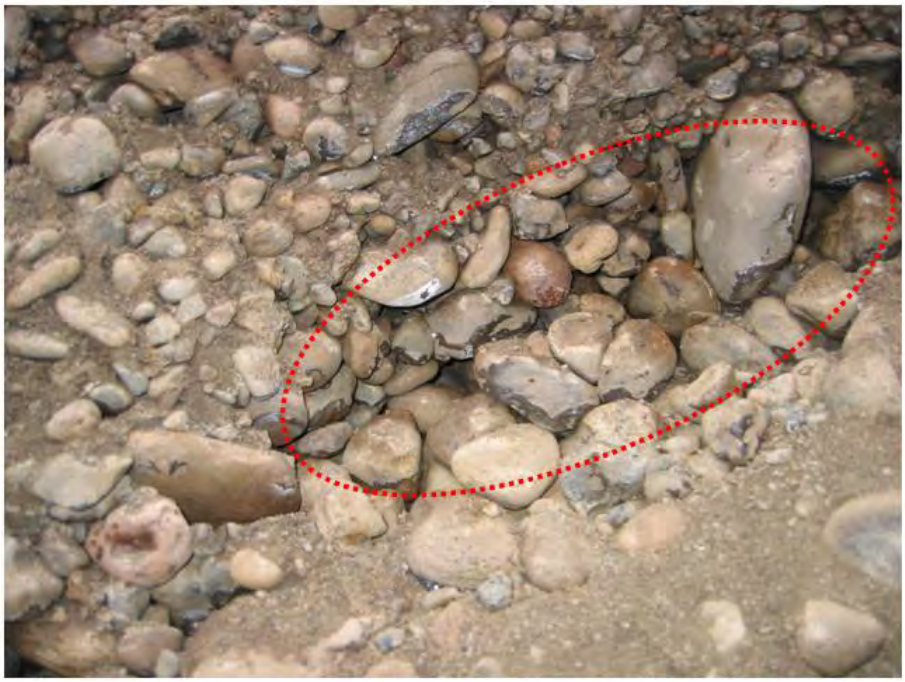
The Quaternary Coarse Alluvium (Qac) geologic layer showed some distinctive layering which would be expected where stream deposition was the primary mechanism of formation. Figure 4 shows layers of brown and grayish hued alluvium which may indicate preferential flow[2] paths through the substrate.

[2] Preferential Flow is defined as "the rapid movement of solutes through fractures, root holes and other heterogeneities, at rates much greater than expected from consideration of the porous medium as a whole. Preferential flow is much more important in vadose transport than in transport within saturated media. (Handbook of Hydrology, Maidment 1993).

Figure 4. Photograph of Quaternary Coarse Alluvium

In the Mio-Pliocene Conglomerate geologic layer, the preferential flow areas are much more pronounced with inter-spatial spacing and "rusty" colored precipitate where water most like flows (Figure 5).

Figure 5. Photograph of Mio-Pliocene Conglomerate and a preferential flow zone



Expansion of Surface and Groundwater Monitoring

During the 2004-5 monitoring period, the WWBWC and HBDIC was able to work to expand the number and spatial coverage of the surface and groundwater stations being monitored for this project. The following is a list of new or upgraded monitoring stations **(Figure 6):**

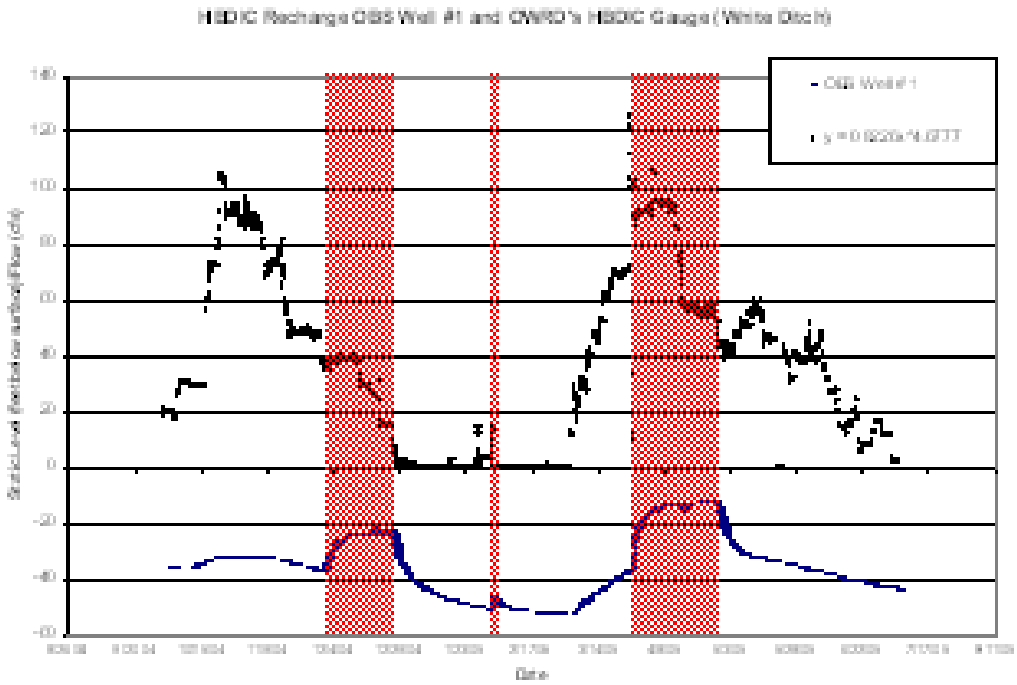
1. Upgradient, open shallow well identified by OWRD (GW-62). This well appears to be a representative "upgradient control" well for the operation and monitoring of the recharge project.
2. New monitoring in the Dugger Creek sub-watershed included four new monitoring wells numbered GW-60, GW-61, GW-63 and GW-64. Non-vented *In-situ Minitroll pressure transducers* were placed in GW-60, GW-61 and GW-64 and set to record hourly water level measurements. GW-63 will be measured with using periodic static measurements of the water level. The HDBIC Dugger Creek/White Ditch Weir structure was retooled with a *Tru-track WT-HR capacitance rod.* The *Starlogger* that had been recording surface flow at that location was not working properly and difficult to keep powered.
3. New Monitoring in the Johnson Creek sub-watershed included two new wells numbered GW-34, GW-58 and GW-65, all three of which were instrumented using the *In-situ* equipment described above. The Johnson Creek and Goodman Spring area headwaters were surveyed and the WWBWC plans to install flow stations at spring source of these two systems during the 2005-6 recharge season.
4. Water Quality measurements are now taken at all surface and groundwater monitoring locations specifically to quantify specific conductivity and temperature.

This information is to be used to further track the movement of the recharged water around and downgradient from the project site.

2004-5 Test Site Operation Results

During the 2004-5 recharge season the project was operated for three separate recharge periods totaling 66 days. This represents an operation period utilization of approximately 34%[3]. This low value was mainly due to the extreme low flow conditions associated with the 2004-5 drought and low snow pack levels in the Blue Mountains. While the total operation period is 196 days, it is not likely that the recharge project would ever operate at 100% due to many factors including the potential icing of the headgate fish screens and the yearly mandatory screen maintenance. As mentioned earlier in this report, the project operated during three separate periods (see timeline above) which are depicted in **Figure 7**. Hudson Bay's operation of its primary ditch (White) which provides water to all three main canals (White, Richartz and Highline) is also shown. The red-banded areas signify the time periods when the recharge project was in operations. Note that ditch operations and the subsequence ditch loss at the project site can be observed in the recharge site observation well levels. The project did take water during a ditch flooding event on 11/24/2004 from 13:00 to 21:00. HBDIC reported that this was due to a backed up culvert on a downgradient state highway causing a short-term water emergency and ditch operations problem on the White system. It should be noted that this event did happen outside the designated test period.

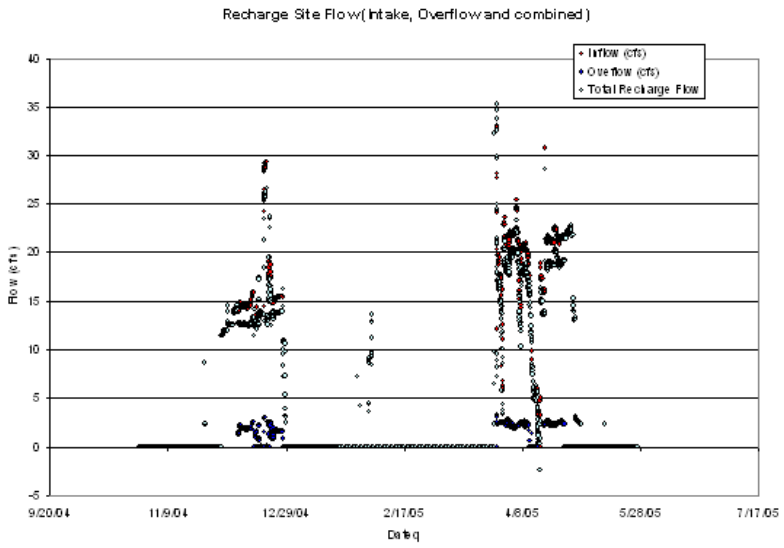
Figure 7. 2004-5 HBDIC Recharge and HBDIC Ditch Operations for Limited License Period



[3] 66 days out of 196 total recharge period, November 1st to May 15th.

The 2005 site expansion also included an improved spreading basin side berms and a deeper, higher capacity overflow canal. These improvements help us to better quantify the actual combined spreading basin infiltration rate and total seasonal recharge volumes. The Intake and Overflow Gauges were rated using standard regression analysis and the rated stage-flow tables[4] for each site. Data was compiled into cubic-feet/second (cfs) and then compared (**Figure 8**). A total recharge flow value was calculated by simply subtracting the overflow from the inflow which is depicted as *combined* flow in **Figure 8**.

Figure 8. 2004-5 Site flow measurement: Intake, Overflow and Total Infiltration Rates



The combined flow was then graphically analyzed to determine approximate average infiltration rates over all three spreading basins. A clear increase in the total rate is observed in **Figure 9**. Pre-spreading basin expansion infiltration rate was estimated around 14 cfs while that rate increased to 18-21 cfs. This 14 cfs value was confirmed in the spring 2004 data analysis as well. HBDIC project operators find it challenging to hold the recharge project at a given inflow rate due to fluctuations in the white ditch stage levels and understanding exactly what rate the project will remain steady at. These spikes and lows in the inflow rate should continue to be reduced as these issues are resolved in continued operations. **Figure 10** shows a picture of the intake structure while in operations.

[4] Intake Gauge is a weir while the Overflow is a ramp-flume.

Figure 9. Total Spreading Basin Infiltration Rate (2004-5)

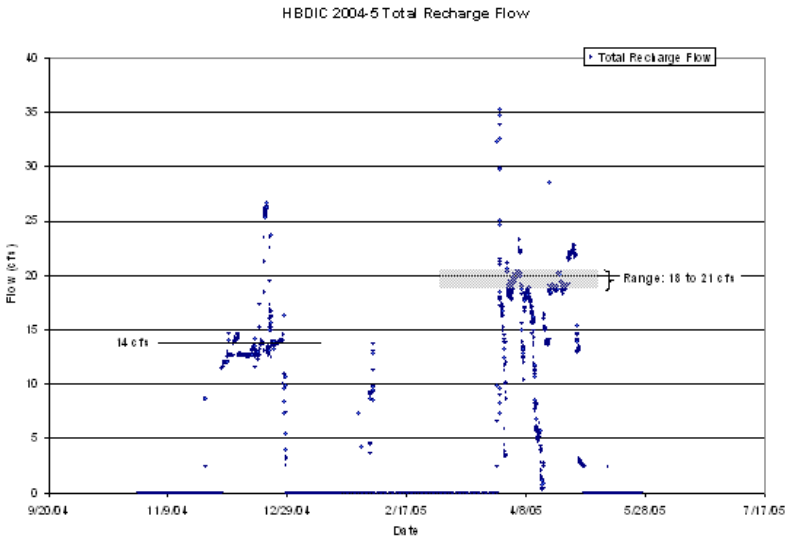


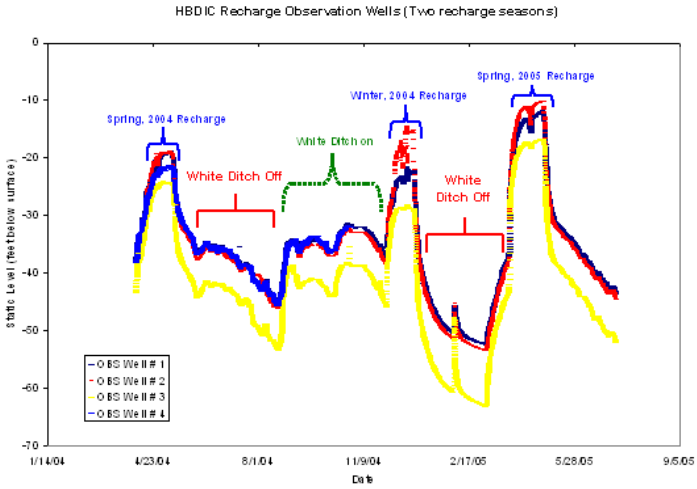
Figure 10. HBDIC Recharge Project Intake Structure in Operation (Spring, 2005)

Using the specific compounded infiltration rates for the season, a total 2004-5 recharged volume was calculated at approximately 1870 acre-feet[5]. This is the equivalent of 610,000,000 gallons or approximately 3 miles of water, 1 foot deep. The total recharge for both seasons would be approximately 2740 acre-feet of recharged water.

A composite of all recharge operations to date is shown in **Figure 11.** One notable issue in this graphic is that of the increased magnitude of the last recharge period (Spring 2005). This larger recharge mound was most likely due to the increase in infiltration area due to the site expansion occurring. Figure 11 shows the Intake

[5] **Calculated:** ($\sum_{\text{total-season-days}}$ ($\sum_{\text{24-hours}}$($\sum_{\text{15-minute per hour}}$ ($\mathbf{Q_{15}}$ (15-minute cfs) X 60 seconds X 15 minutes)))) x 7.48 (cubic feet to gallons))/ 325851 (gallons to acre-feet) = total acre-feet

Figure 11. Composite observation well data for all recharge events todate (Spring 2004 to Summer 2005)



2004-5 Water Quality Results

Water quality samples were collected on several different occasions during the 2004-5 recharge period. Shortly after the project first operated on December 12th, 2004 samples were collected at the intake (source water) and at observation well #1 **(Figure 2.)** A third and final sample was collected on May, 19th 2005 at observation well #1, shortly after the project was turned off for the recharge season in order to assess aquifer water quality conditions. Certified lab results in **Appendices I.** Sampling parameters for all three primary samplings included:

1. Baseline Chemistry:
    a. Chemical Oxygen Demand
    b. TKN as Nitrogen
    c. Nitrate as Nitrogen
    d. Chloride
    e. Soluble Reactive Phosphorus
    f. Total Dissolved Solids
2. Fecal *E. Coli* (MPN plate method) for concentration
3. Soluble Organic Compounds Tested to the Environmental Protection Agencies Drinking Water Standards. (E.G. Pesticides, Herbicides, Fungicides, etc.). 85 separate analytes.

Duplicate samples were also collected on both the baseline and *E. coli* samples to comply with a 10% repeatability Quality Assurance/Quality Control requirement outlined originally in the HBDIC Recharge Project Monitoring Plan[6]. However, due to the high cost of the

[6] Hudson Bay Aquifer Recharge Project: An application for ASR Testing Limited License to Oregon Water Resources Department (OWRD) (OAR 690-350-0020)

SOC sampling, the project team has opted to rely on the laboratories[7] in-house QA/QC protocols and certification process to insure our samples are accurate and representative of what we are measuring.

Results from the monitoring of the baseline chemicals showed **low levels** of these compounds in both the source and recharge area groundwater. Fecal *E. Coli* were present in all three primary samples taken, however it is thought that their presence in these samples is due to an area wide background condition. There were **No Detections** in any of the SOC testing done during the 2004-5 recharge period.

Additional fecal *E. Coli* samples were also collected during the 2004-5 recharge period in order to better understand the 2004 results and perceived 'background' presence of fecal bacteria in the surface and surrounding groundwater system (**Table W2**). These additional results indicated that fecal bacteria <u>are present</u> in other surrounding and upgradient (control) wells at values above drinking water standard. Observation well GW-62[8] showed fecal bacteria contamination and is well upgradient from any influence from the recharge project operations. This is mostly likely due to poorly maintained or improperly installed septic systems that leach fecal bacteria into the surrounding water supplies, both surface and groundwater. Figures WQ-1 and WQ-2 show the locations of the additional fecal samples and also locations where fecal *E. Coli* were detected. The fecal contamination also appears to be episodic in nature with some sites having both "non detections" as well as substantial "hits" for the bacteria.

[7] EDGE Analytical Inc.

[8] Well found by OWRD as a control well for the HBDIC Recharge project. Abandoned, hand dug, domestic well without a pump.

WQ-Table 1

Baseline Chemicals

Location:	OBS Well #1					
Collection Date	**Sample #**	**Analysis**	**Results**	**Duplicates**	**MDL**	**Units**
12/8/2004	74118	COD	<8	<8	8.000	mg/L
12/8/2004	74118	TKN as Nitrogen	<0.72	<0.72	0.720	mg/L
12/8/2004	74118	Nitrate as Nitrogen	0.1	0.1	0.044	mg/L
12/8/2004	74118	Chloride	ND	ND	0.297	mg/L
12/8/2004	74118	Soluble Reactive Phosphorus	0.06	0.06	0.037	mg/L
12/8/2004	74118	Total Dissolved Solids	34	34	20.300	mg/L
Location:	**Intake**					
Collection Date	**Sample #**	**Analysis**	**Results**	**Duplicates**	**MDL**	**Units**
12/8/2004	74117	COD	12		8.000	mg/L
12/8/2004	74117	TKN as Nitrogen	<0.72		0.720	mg/L
12/8/2004	74117	Nitrate as Nitrogen	0.1		0.044	mg/L
12/8/2004	74117	Chloride	1		0.297	mg/L
12/8/2004	74117	Soluble Reactive Phosphorus	0.02		0.037	mg/L
12/8/2004	74117	Total Dissolved Solids	24		20.300	mg/L
Location	**OBS Well #1**					
Collection Date	**Sample #**	**Analysis**	**Results**	**Duplicates**	**MDL**	**Units**
5/19/2005		COD	<8		8.000	mg/L
5/19/2005		TKN as Nitrogen	<0.72		0.720	mg/L
5/19/2005		Nitrate as Nitrogen	0.11		0.044	mg/L
5/19/2005		Chloride	ND		0.297	mg/L
5/19/2005		Soluble Reactive Phosphorus	0.155		0.037	mg/L
5/19/2005		Total Dissolved Solids	48		20.300	mg/L

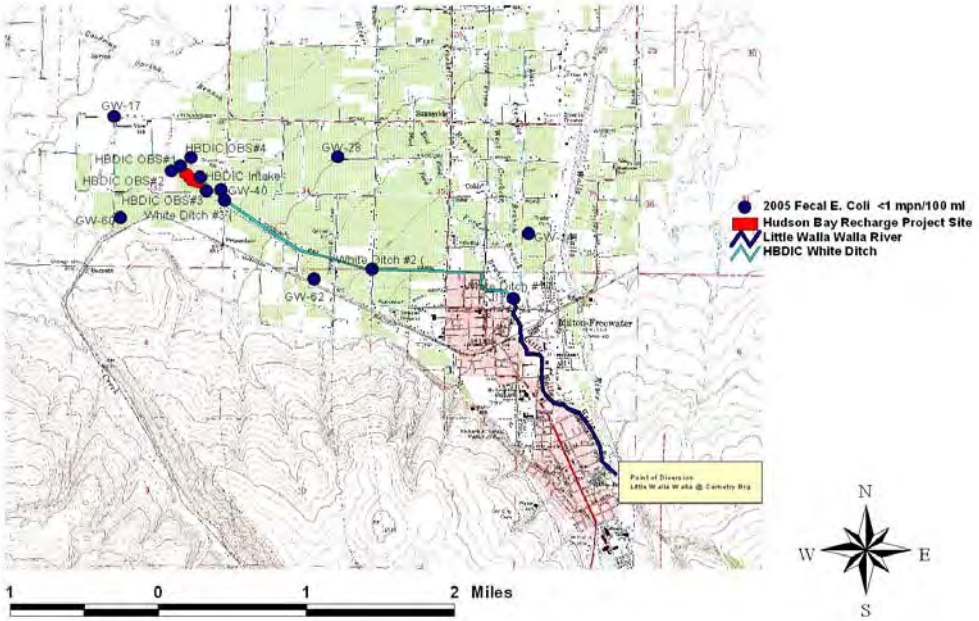
Sampled by: Z. Gray, WWBWC

WQ-Table 2

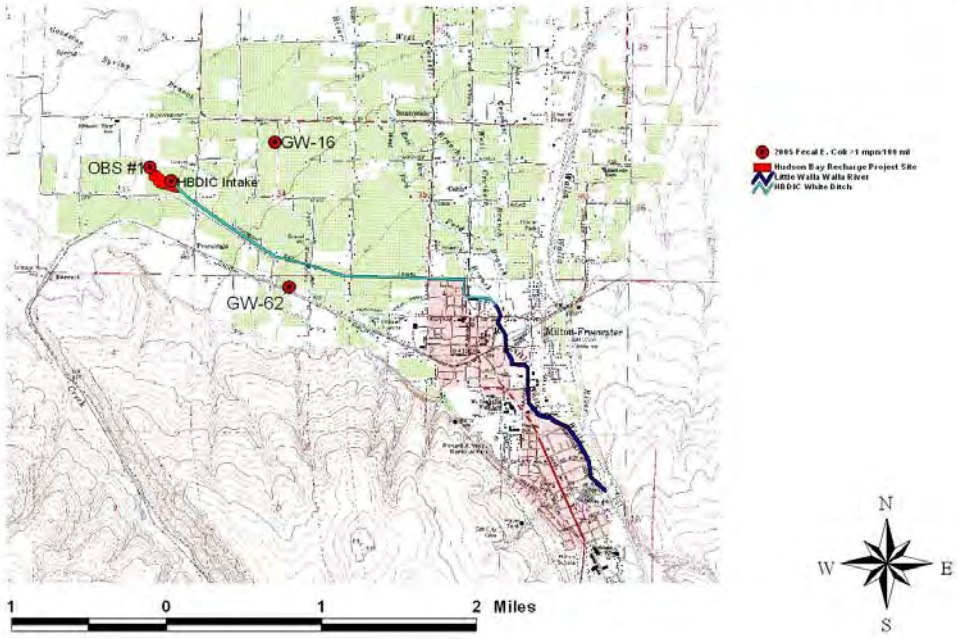
Fecal E. Coli Sampling Results

Date	Time	Location	Results	What	Collector
12/1/2004	11:05	GW-16	3	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:25	HBDIC OBS#3 (A)	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:10	GW-61	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	11:25	GW-28	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	13:15	GW-17	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:25	HBDIC OBS #3(B)	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	11:45	GW-14	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	13:05	GW-39	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	11:40	White Ditch #1 (Frog)	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	13:05	White Ditch#3 (Prunesdale Road)	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:40	HBDIC OBS #1	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:50	HBDIC Intake (B)	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:50	HBDIC Intake (A)	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:55	HBDIC OBS #4	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:40	HBDIC OBS #1B	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	11:35	White Ditch #2 (Winesap Road)	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:35	HBDIC OBS #2	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	11:55	GW-9	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:05	GW-60	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
12/8/2004	14:00	HBDIC OBS #1	12	Fecal E-Coli (MPN/100 ML)	Z Gray
12/8/2004	14:15	HBDIC Intake	62	Fecal E-Coli (MPN/100 ML)	Z Gray
1/5/2005	12:05	HBDIC OBS #1	2	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:20	GW-62	11	Fecal E-Coli (MPN/100 ML)	Z Gray
4/6/2005	11:25	HBDIC Intake	4	Fecal E-Coli (MPN/100 ML)	Z Gray
	11:40	HBDIC OBS #1	1	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:00	GW-40	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
	12:10	GW-62	<1	Fecal E-Coli (MPN/100 ML)	Z Gray
		GW-62	2	Fecal E-Coli (MPN/100 ML)	Z Gray
5/19/2005	N/A	HBDIC OBS #1	5	Fecal E-Coli (MPN/100 ML)	Z Gray

WQ-Figure 1. Fecal E. Coli <1 MPN/100 ML Locations



WQ-Figure 2. Fecal E. Coli >1 MPN/100 ml



Rusty Water Issue at WWBWC Office

During the spring 2005 operations period for the recharge project, a brownish precipitate appeared in the wash room sinks and toilets of the WWBWC offices at the Pleasantview school. With the WWBWC offices being directly downgradient from the recharge project there was immediate concern that the project could be the source of this precipitate. Water samples were collected along with water samples at the recharge site in order to assess the source of this "rusty water". A *initial-response* assessment report and plan was generated and sent to ODEQ (**Appendices II**). After collecting samples and reviewing all the facts surround the *rusty water* issue, it was estimated that the discolored water was NOT directly related to HBDIC recharge project due to the following factors:

1. Water quality sampling indicated strong presence of Iron (**Table WQ-3**). Well casing is iron.
2. Long term WWBWC staff also recalled having seen this precipitate in the WWBWC office wells in years prior to the recharge projects operating.
3. OWRD staff suggested that from their experience well casings (iron) can often be a source for discolored water when the aquifer level changes enough to submerge portions of the well casing where rust has accumulated over time.
4. Physical examination of the a water sample taken from the office and from the spreading basins onsite (where brown colored rocks were placed in water) showed that the *rusty* water sample stayed in solution much longer than precipitate from the site and that the coloring was distinctly different (Figure WQ-3)

After approximately 10 days the *rusty* water did disappear from the WWBWC office wells and was not seen again for the remaining recharge operations period.

Figure WQ-3. Water samples taken of WWBWC office water and HBDIC spreading basin precipitate

WQ-Table 3
Baseline Chemistry for WWBWC Office Well

Collection Date	Sample #	Analysis	Results	MDL	Units
4/14/2005	75948	Boron	ND	0.009	mg/L
		Calicum	11.2	0.002	mg/L
		Magnesium	4.6	0.002	mg/L
		Phosphorus	0.06	0.030	mg/L
		Potassium	3.3	0.058	mg/L
		Sodium	5.8	0.314	mg/L
		Copper	0.01	0.002	mg/L
		Iron	6.3	0.004	mg/L
		Manganese	0.01	0.001	mg/L
		Zinc	<0.015	0.015	mg/L
		Sulfur	0.81	0.060	mg/L

Collected by: Bob Bower, WWBWC

2004-5 Down-Gradient Monitoring Results

The 2004-5 monitoring set up for the HBDIC Recharge project was focused on the two closest downgradient spring-creek watersheds, Dugger and Johnson Creek (**Figure 12**.) In these two watersheds data from designated observation wells was processed and compared to data from HBDIC recharge site wells. Using the 'mounding' event of the water table caused by the recharge project operations the movement of water was tracked in both the Johnson Creek and Dugger Creek systems **(Figures 13A, 13B, and 13C**). This confirms the anecdotal reports from water users in both these watersheds reporting well levels increasing.

Figure 13A. Johnson Creek Watershed Observation Wells

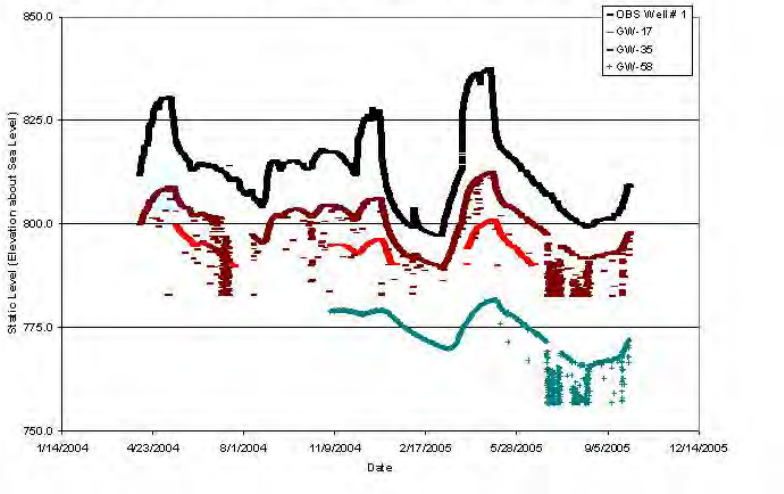


Figure 13B. Dugger Creek Watershed Observation Wells

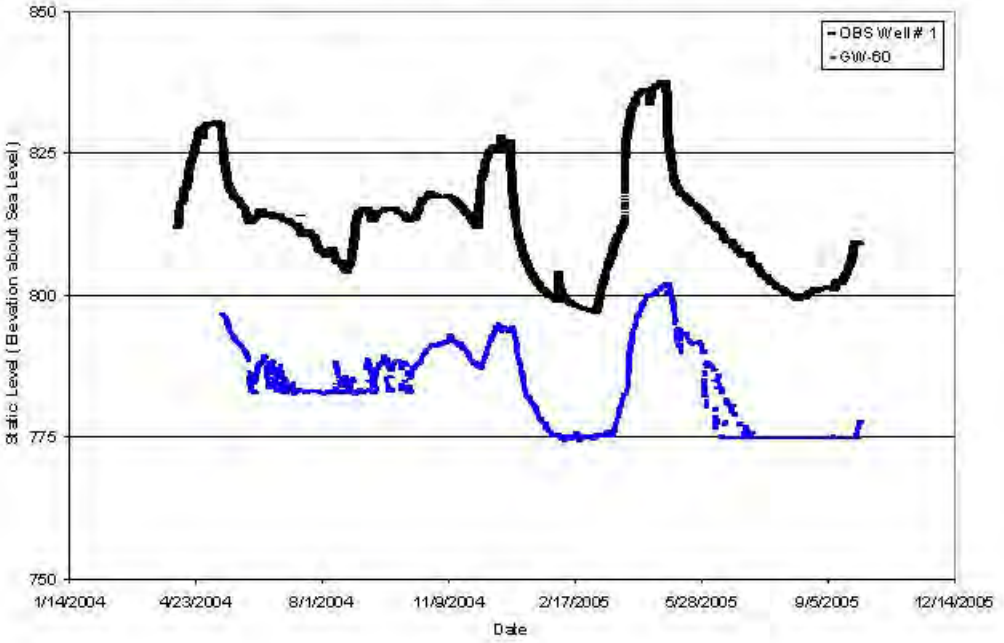
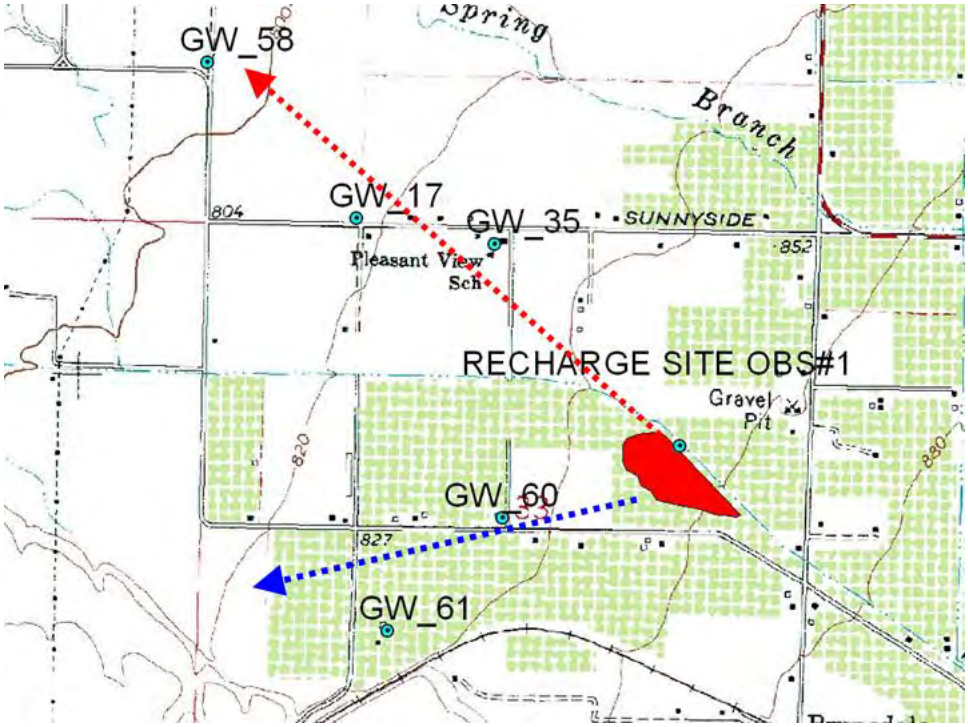
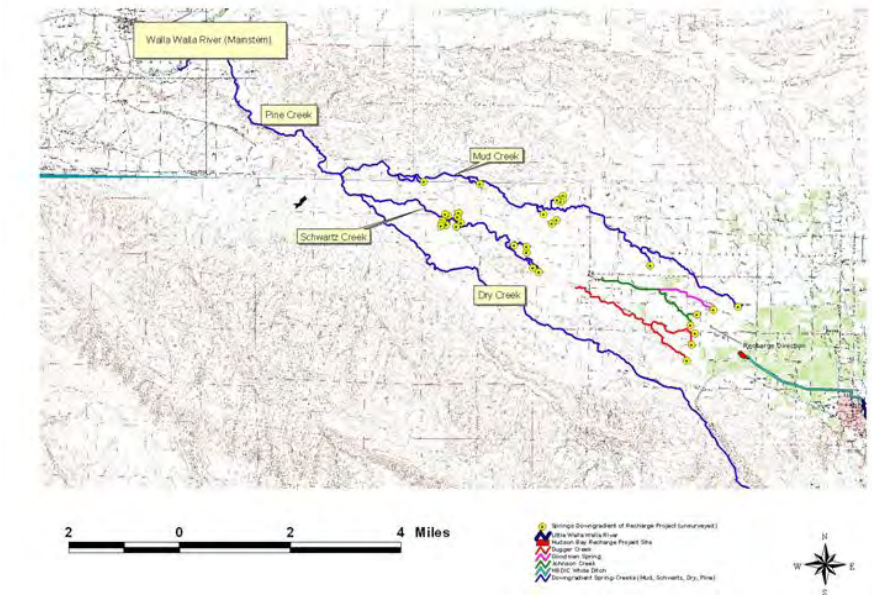


Figure 13C. Wells showing water movement from Recharge Project



During the 2004-5 recharge operation period there were many landowners who talked about wells recovering to levels "higher than in recent memory" and spring-creek flows also being reported to have higher than normal flows in them. This type of reports from the downgradient water user community has been very useful for the monitoring team to better understand the where the recharge water is showing up downgradient which allows new monitoring equipment to be deployed to quantify these changes with flow and water table data. Anecdotal reports of higher water tables and increase stream flows have come from the Dugger, Johnson, Mud and Schwartz spring-creek watersheds (**Figure 14**). Monitoring of these systems will be increased as the project progresses.

Figure 14. HBDIC Recharge Project Area: Downgradient Spring-Creeks and Springs leading to Walla Walla River



Other monitoring Results

2004-5 Summary of Results

1. Aquifer responded to White ditch and recharge project operation
2. Recharge project expansion of spreading basins increased the total rate of infiltration
3. Recharge water "mound" was tracked in downgradient wells
4. Recharge water tracked with both Dugger and Johnson Creek Watersheds

This report marks the second year of a five year test project for aquifer recharge. As additional funding for monitoring, analysis and modeling is applied for, the HBDIC recharge team intends to expand and better define the results for this project.

References:

2004, Kennedy and Jenks Inc. Lindsey, K., Tolan, T., Lindsey Test Site Hydrogeologic Assessment Sediment Aquifer Study K/J 026046.10

Appendices I

Water Quality Lab Results

In following order:

- Baseline Chemistry
- Fecal E. Coli Testing
- Soluble Organic Compound Testing

Kuo Testing Labs, Inc.

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(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

SYSTEM ASSIGNED	DATE COLLECTED	DATE RECEIVED	DATE REPORTED
	12/8/2004	12/9/2004	12/23/2004

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYZED
74117	Intake	COD	12	8	mg/L	Wang
74117	Intake	TKN as Nitrogen	<0.72	0.72	mg/L	Wang
74117	Intake	Nitrate as Nitrogen	0.1	0.044	mg/L	Wang
74117	Intake	Chloride	1.00	0.297	mg/L	Wang
74117	Intake	Soluble Reactive Phosphoru	0.02		mg/L	Wang
74117	Intake	Total Disolved Solids	24	20.3	mg/L	Wang
74117	Intake	Fecal E-Coli	62	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L: Indicates milligrams per litre
* PQL–Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
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Molly Lee for Eugene
Dr. Eugene Kuo, Quality Assurance Coordinator

Dec. 28, 2004
Date

Kuo Testing Labs, Inc.

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(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED: 12/8/2004
DATE RECEIVED:
SEND REPORT TO: 12/9/2004
DATE REPORTED: 12/21/2004

SYSTEM / CUSTOMER:

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862

Project Name:

Bob Bower
PO Box 68
Milton Freewater OR 97862

Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYST
74118	OBS Well #1	COD	<8	8	mg/L	Wang
74118	OBS Well #1	TKN as Nitrogen	<0.72	0.72	mg/L	Wang
74118	OBS Well #1	Nitrate as Nitrogen	0.1	0.044	mg/L	Wang
74118	OBS Well #1	Chloride	ND	0.297	mg/L	Wang
74118	OBS Well #1	Soluble Reactive Phosphoru	0.06		mg/L	Wang
74118	OBS Well #1	Total Dissolved Solids	34	20.3	mg/L	Wang
74118	OBS Well #1	Fecal E-Coli	12	1	MPN/100mL	Valley Enviornment

<(0.001): Indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L: Indicates milligrams per litre
* PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
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Mollyann for Eugene
Dr. Eugene Kuo, Quality Assurance Coordinator

Dec. 22, 2004
Date

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(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
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DATE COLLECTED: 5/19/2005
DATE RECEIVED: 5/20/2005
DATE REPORTED: 6/2/2005

SYSTEM / CUSTOMER

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO:
Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
76493	OBS #1	Total Dissolved Solids	48	20.3	mg/L	Wang
76493	OBS #1	Nitrate as Nitrogen	0.11	0.044	mg/L	Wang
76493	OBS #1	TKN as Nitrogen	<0.72	0.72	mg/L	Wang
76493	OBS #1	COD	<8	8	mg/L	Wang
76493	OBS #1	Chloride	ND	0.297	mg/L	Wang
76493	OBS #1	SRP-(Othro-P)	0.155	0.03	mg/L	Wang

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
None Detected
L:Indicates milligrams per litre
• PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
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Dr. Eugene Kuo, Quality Assurance Coordinator

06-09-05
Date

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DATE COLLECTED: 12/1/2004
DATE RECEIVED: 12/6/2004
DATE REPORTED: 12/6/2004

SYSTEM / CUSTOMER

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO:
Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
74008	Reesa Well	Fecal E-Coli	3	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
QL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
DL: Method Detection Limit
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Dr. Eugene Kuo, Quality Assurance Coordinator

12-07-04
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DATE COLLECTED: 12/1/2004
DATE RECEIVED: 12/6/2004
DATE REPORTED: 12/6/2004

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W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO:
Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYST
74025	McKnight	Fecal E-Coli	<1	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
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DATE COLLECTED: 12/1/2004
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DATE REPORTED: 12/6/2004

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PO Box 68
Milton Freewater OR 97862

SEND REPORT TO:
Bob Bower
PO Box 68
Milton Freewater OR 97862

Project Name:

Attn:

SAMPLE NO.	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MCL	UNITS	ANALYST
74009	Brown	Fecal E-Coli	<1	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
)L=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
.L: Method Detection Limit
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12-07-04
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DATE REPORTED: 12/6/2004

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PO Box 68
Milton Freewater OR 97862

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Bob Bower
PO Box 68
Milton Freewater OR 97862

Project Name:

Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
74010	Winesap	Fecal E-Coli	<1	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
QL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
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12-07-04
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SYSTEM / CUSTOMER	DATE COLLECTED	DATE RECEIVED	DATE REPORTED
	12/1/2004		
SEND REPORT TO		12/6/2004	12/6/2004

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSIS
74011	Frog	Fecal E-Coli	<1	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
)L=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
L: Method Detection Limit

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12-07-04
Date

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DATE COLLECTED 1/5/2005 DATE RECEIVED 1/6/2005 DATE REPORTED 11/28/2005

SYSTEM / CUSTOMER

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO

Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO.	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
74644	GW 62	Fecal E-Coli	11	1	MPN/100ml	Cascade Analytical

<0.0001: indicates the analyte was not detected at or above the concentration indicated
ND: None Detected
mg/L: Indicates milligrams per liter
* PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
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DATE COLLECTED: 1/5/2005
DATE RECEIVED: 1/6/2005
DATE REPORTED: 11/28/2005

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Project Name:

SEND REPORT TO

Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
74643	OBS Well 1	Fecal E-Coli	2	1	MPN/100ml	Cascade Analytical

<(0.001) indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L Indicates milligrams per litre
* PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
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DATE COLLECTED: 5/19/2005
DATE RECEIVED: 5/25/2005
DATE REPORTED: 5/25/2005

SYSTEM / CUSTOMER

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO:
Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
76546	OBS #1	Fecal E-Coli	5	1	MPN/100 ml	Valley Enviornental

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
* PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
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Dr. Eugene Kuo, Quality Assurance Coordinator

05-25-05
Date

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Burlington, WA 98233
(800) 755-9295
(360) 757-1400 - FAX (360) 757-1402

HERBICIDES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 05-05830

Project: 76494

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS #1
County:

Field ID: W W B W C
Lab Number: 04613162
Date Collected: 5/19/2005
Date Extracted: 515_050601
Date Analyzed: 6/3/2005
Report Date: 6/6/2005
Analyst: CMH
Supervisor:

EPA Method 515.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
37	2,4 - D	**ND**	ug/L	0.2	0.2	70	
38	2,4,5 - TP (SILVEX)	**ND**	ug/L	0.4	0.4	50	
134	PENTACHLOROPHENOL	**ND**	ug/L	0.08	0.08	1	
137	DALAPON	**ND**	ug/L	2	2	200	
139	DINOSEB	**ND**	ug/L	0.4	0.4	7	
140	PICLORAM	**ND**	ug/L	0.2	0.2	500	
	EPA Unregulated						
138	DICAMBA	**ND**	ug/L	0.2	0.2		
	State Unregulated						
135	2,4 DB	**ND**	ug/L	1.0	1.0		
136	2,4,5 T	**ND**	ug/L	0.4	0.4		
220	BENTAZON	**ND**	ug/L	0.5	0.5		
221	DICHLORPROP	**ND**	ug/L	0.5	0.5		
223	ACTIFLORFIN	**ND**	ug/L	2.0	2.0		
225	DACTHAL (DCPA)	**ND**	ug/L	0.1	0.1		
226	3,5 - DICHLOROBENZOIC ACID	**ND**	ug/L	0.5	0.5		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

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SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 05-05830

Project: 76494

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS #1
County:
Sampled By:
Sampler Phone:

Field ID: W W B W C
Lab Number: 04613162
Date Collected: 5/19/2005
Date Extracted: 525_050601
Date Analyzed: 6/7/2005
Report Date: 6/17/2005
Analyst: MW
Supervisor:

EPA Method 525.2 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
33	ENDRIN	ND	ug/L	0.02	0.02	2	
34	LINDANE (BHC - GAMMA)	ND	ug/L	0.04	0.04	0.2	
35	METHOXYCHLOR	ND	ug/L	0.2	0.2	40	
117	ALACHLOR	ND	ug/L	0.4	0.4	2	
119	ATRAZINE	ND	ug/L	0.2	0.2	3	
120	BENZO(A)PYRENE	ND	ug/L	0.04	0.04	0.2	
122	CHLORDANE, TECHNICAL	ND	ug/L	0.4	0.4	2	
124	DI(ETHYLHEXYL)-ADIPATE	ND	ug/L	1.3	1.3	400	
125	DI(ETHYLHEXYL)-PHTHALATE	ND	ug/L	1.3	1.3	6	
126	HEPTACHLOR	ND	ug/L	0.08	0.08	0.4	
127	HEPTACHLOR EPOXIDE (A&B)	ND	ug/L	0.04	0.04	0.2	
128	HEXACHLOROBENZENE	ND	ug/L	0.2	0.2	1	
129	HEXACHLOROCYCLO-PENTADIENE	ND	ug/L	0.2	0.2	50	
133	SIMAZINE	ND	ug/L	0.15	0.15	4	
	EPA Unregulated						
118	ALDRIN	ND	ug/L	0.2	0.2		
121	BUTACHLOR	ND	ug/L	0.4	0.4		
123	DIELDRIN	ND	ug/L	0.2	0.2		
130	METOLACHLOR	ND	ug/L	1.0	1.0		
131	METRIBUZIN	ND	ug/L	0.2	0.2		
132	PROPACHLOR	ND	ug/L	0.2	0.2		
	State Unregulated - Other						
179	BROMACIL	ND	ug/L	0.2	0.2		
183	PROMETON	ND	ug/L	0.2	0.2		Qualitative Analysis Only
190	TERBACIL	ND	ug/L	0.2	0.2		
202	DIAZINON	ND	ug/L	0.2	0.2		Unstable in Acidified Sample Matrix
208	EPTC	ND	ug/L	0.3	0.3		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
232	4,4-DDD	ND	ug/L	0.2	0.2		
233	4,4-DDE	ND	ug/L	0.2	0.2		
234	4,4-DDT	ND	ug/L	0.2	0.2		
236	CYANAZINE	ND	ug/L	0.2	0.2		Qualitative Analysis Only
239	MALATHION	ND	ug/L	0.2	0.2		
240	PARATHION	ND	ug/L	0.2	0.2		
243	TRIFLURALIN	ND	ug/L	0.2	0.2		
	- PAHs						
96	NAPTHALENE	ND	ug/L	0.1	0.1		
154	FLUORENE	ND	ug/L	0.2	0.2		
244	ACENAPHTHYLENE	ND	ug/L	0.2	0.2		
245	ACENAPHTHENE	ND	ug/L	0.2	0.2		
246	ANTHRACENE	ND	ug/L	0.2	0.2		
247	BENZ(A)ANTHRACENE	ND	ug/L	0.1	0.1		
248	BENZO(B)FLUORANTHENE	ND	ug/L	0.2	0.2		
249	BENZO(G,H,I)PERYLENE	ND	ug/L	0.2	0.2		
250	BENZO(K)FLUORANTHENE	ND	ug/L	0.2	0.2		
251	CHRYSENE	ND	ug/L	0.2	0.2		
252	DIBENZO(A,H)ANTHRACENE	ND	ug/L	0.2	0.2		
253	FLUORANTHENE	ND	ug/L	0.2	0.2		
255	!NDENO(1,2,3-CD)PYRENE	ND	ug/L	0.2	0.2		
256	PHENANTHRENE	ND	ug/L	0.2	0.2		
257	PYRENE	ND	ug/L	0.2	0.2		
	- Phthalates						
258	BENZYL BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
259	DI-N-BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
260	DIETHYL PHTHALATE	ND	ug/L	0.6	0.6		
261	DIMETHYL PHTHALATE	ND	ug/L	0.6	0.6		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.

**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.

***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.

****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.

J - Estimated value.

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SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS #1
County:

Reference Number: 05-05830
Project: 76494
Field ID: W W B W C
Lab Number: 04613162
Date Collected: 5/19/2005
Date Extracted: 508_050601
Date Analyzed: 6/2/2005
Report Date: 6/3/2005
Analyst: MW
Supervisor:

EPA Method 508.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	PCBs/Toxaphene						
36	TOXAPHENE	**ND**	ug/L	2	2	3	
173	AROCLOR 1221	**ND**	ug/L	20	20		
174	AROCLOR 1232	**ND**	ug/L	0.5	0.5		
175	AROCLOR 1242	**ND**	ug/L	0.5	0.3		
176	AROCLOR 1248	**ND**	ug/L	0.1	0.1		
177	AROCLOR 1254	**ND**	ug/L	0.1	0.1		
178	AROCLOR 1260	**ND**	ug/L	0.2	0.2		
180	AROCLOR 1016	**ND**	ug/L	0.1	0.1		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

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CARBAMATES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS #1
County:
Sampled By:
Sampler Phone:

Reference Number: 05-05830

Project: 76494

Field ID: W W B W C
Lab Number: 04613162
Date Collected: 5/19/2005
Date Extracted: 531_050609
Date Analyzed: 6/9/2005
Report Date: 6/13/2005
Analyst: TW
Supervisor:

EPA Method 531.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
146	CARBOFURAN	**ND**	ug/L	1.8	1.8	40	
148	OXYMAL	**ND**	ug/L	4.0	4.0	200	
	EPA Unregulated						
141	3-HYDROXYCARBOFURAN	**ND**	ug/L	2.0	2.0		
142	ALDICARB	**ND**	ug/L	1.0	1.0		
143	ALDICARB SULFONE	**ND**	ug/L	1.6	1.6		
144	ALDICARB SULFOXIDE	**ND**	ug/L	1.0	1.0		
145	CARBARYL	**ND**	ug/L	2.0	2.0		
147	METHOMYL	**ND**	ug/L	1.0	4.0		
	State Unregulated - Other						
326	PROPOXUR (BAYGON)	**ND**	ug/L	1.0			
327	METHIOCARB	**ND**	ug/L	4			

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

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HERBICIDES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075
Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS Well #1
County:

Field ID: 74116
Lab Number: 04624846
Date Collected: 12/8/2004
Date Extracted: 515_041217
Date Analyzed: 1/5/2005
Report Date: 1/7/2005
Analyst: CMH
Supervisor: JW

EPA Method 515.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
37	2,4 - D	ND	ug/L	0.2	0.2	70	
38	2,4,5 - TP (SILVEX)	ND	ug/L	0.4	0.4	50	
134	PENTACHLOROPHENOL	ND	ug/L	0.08	0.08	1	
137	OALAPON	ND	ug/L	2	2	200	
139	DINOSEB	ND	ug/L	0.4	0.4	7	
140	PICLORAM	ND	ug/L	0.2	0.2	500	
	EPA Unregulated						
138	DICAMBA	ND	ug/L	0.2	0.2		
	State Unregulated						
135	2,4 DB	ND	ug/L	1	1.0		
136	2,4,5 T	ND	ug/L	0.4	0.4		
220	BENTAZON	ND	ug/L	0.5	0.5		
221	DICHLORPROP	ND	ug/L	0.5	0.5		
223	ACTIFLORFIN	ND	ug/L	2	2.0		
225	DACTHAL (DCPA)	ND	ug/L	0.1	0.1		
226	3,5 - DICHLOROBENZOIC ACID	ND	ug/L	0.5	0.5		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected = or > to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero
J - Estimated value

FORM SOC97

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Burlington, WA 98233
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SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS Well #1
County:

Reference Number: 04-12075
Project: 74115/74116
Field ID: 74116
Lab Number: 04624846
Date Collected: 12/8/2004
Date Extracted: 525_041220
Date Analyzed: 12/22/2004
Report Date: 1/6/2005
Analyst: CMH
Supervisor:

EPA Method 525.2 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
33	ENDRIN	ND	ug/L	0.02	0.02	2	
34	LINDANE (B HC - GAMMA)	ND	ug/L	0.04	0.04	0.2	
35	METHOXYCHLOR	ND	ug/L	0.2	0.2	40	
117	ALACHLOR	ND	ug/L	0.4	0.4	2	
119	ATRAZINE	ND	ug/L	0.2	0.2	3	
120	BENZO(A)PYRENE	ND	ug/L	0.04	0.04	0.2	
122	CHLORDANE, TECHNICAL	ND	ug/L	0.4	0.4	2	
124	DI(ETHYLHEXYL)-ADIPATE	ND	ug/L	1.3	1.3	400	
125	DI(ETHYLHEXYL)-PHTHALATE	ND	ug/L	1.3	1.3	6	
126	HEPTACHLOR	ND	ug/L	0.08	0.08	0.4	
127	HEPTACHLOR EPOXIDE (A&B)	ND	ug/L	0.04	0.04	0.2	
128	HEXACHLOROBENZENE	ND	ug/L	0.2	0.2	1	
129	HEXACHLOROCYCLO-PENTADIENE	ND	ug/L	0.2	0.2	50	
133	SIMAZINE	ND	ug/L	0.15	0.15	4	
	EPA Unregulated						
118	ALDRIN	ND	ug/L	0.2	0.2		
121	BUTACHLOR	ND	ug/L	0.4	0.4		
123	DIELDRIN	ND	ug/L	0.2	0.2		
130	METOLACHLOR	ND	ug/L	1	1.0		
131	METRIBUZIN	ND	ug/L	0.2	0.2		
132	PROPACHLOR	ND	ug/L	0.2	0.2		
	State Unregulated - Other						
179	BROMACIL	ND	ug/L	0.2	0.2		
183	PROMETON	ND	ug/L	0.2	0.2		
190	TERBACIL	ND	ug/L	0.2	0.2		
202	DIAZINON	ND	ug/L	0.2	0.2		
208	EPTC	ND	ug/L	0.3	0.3		
232	4,4-DDD	ND	ug/L	0.2	0.2		
233	4,4-DDE	ND	ug/L	0.2	0.2		

* An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL
** Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA. NPDWR. State Advisory Level (SAL) for Unregulated compounds
A blank MCL or SAL value indicates a level is not currently established.
*** If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH
**** Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 95% confidence that the compound concentration is greater than zero
J - Estimated value

EDGE ANALYTICAL

Reference Number: 04-12075
Lab Number 04624845
Report Date: 1/5/2005

SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
234	4,4-DDT	ND	ug/L	0.2	0.2		
236	CYANAZINE	ND	ug/L	0.2	0.2		
239	MALATHION	ND	ug/L	0.2	0.2		
240	PARATHION	ND	ug/L	0.2	0.2		
243	TRIFLURALIN	ND	ug/L	0.2	0.2		
	- PAHs						
96	NAPTHALENE	ND	ug/L	0.1	0.1		
154	FLUORENE	ND	ug/L	0.2	0.2		
244	ACENAPHTHYLENE	ND	ug/L	0.2	0.2		
245	ACENAPHTHENE	ND	ug/L	0.2	0.2		
248	ANTHRACENE	ND	ug/L	0.2	0.2		
247	BENZ(A)ANTHRACENE	ND	ug/L	0.1	0.1		
248	BENZO(B)FLUORANTHENE	ND	ug/L	0.2	0.2		
249	BENZO(G,H,I)PERYLENE	ND	ug/L	0.2	0.2		
250	BENZO(K)FLUORANTHENE	ND	ug/L	0.2	0.2		
251	CHRYSENE	ND	ug/L	0.2	0.2		
252	DIBENZO(A,H)ANTHRACENE	ND	ug/L	0.2	0.2		
253	FLUORANTHENE	ND	ug/L	0.2	0.2		
255	INDENO(1,2,3-CD)PYRENE	ND	ug/L	0.2	0.2		
256	PHENANTHRENE	ND	ug/L	0.2	0.2		
257	PYRENE	ND	ug/L	0.2	0.2		
	- Phthalates						
258	BENZYL BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
259	DI-N BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
260	DIETHYL PHTHALATE	ND	ug/L	0.6	0.6		
261	DIMETHYL PHTHALATE	ND	ug/L	0.6	0.6		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds
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J - Estimated value.

FORM: BOC9/

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CARBAMATES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075

Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS Well #1
County:

Field ID: 74116
Lab Number: 04624846
Date Collected: 12/8/2004
Date Extracted: 531_041215
Date Analyzed: 12/15/2004
Report Date: 12/20/2004
Analyst: TW
Supervisor:

EPA Method 531.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
146	CARBOFURAN	ND	ug/L	1.8	1.8	40	
148	OXYMAL	ND	ug/L	4	4.0	200	
	EPA Unregulated						
141	3-HYDROXYCARBOFURAN	ND	ug/L	2	2.0		
142	ALDICARB	ND	ug/L	1	1.0		
143	ALDICARB SULFONE	ND	ug/L	1.6	1.6		
144	ALDICARB SULFOXIDE	ND	ug/L	1	1.0		
145	CARBARYL	ND	ug/L	2	2.0		
147	METHOMYL	ND	ug/L	1	4.0		
	State Unregulated - Other						
326	PROPOXUR (BAYGON)	ND	ug/L	1			
327	METHIOCARB	ND	ug/L	4			

* An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
** - Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
*** - If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
**** - Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

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SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075
Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS Well #1
County:

Field ID: 74116
Lab Number: 04624846
Date Collected: 12/8/2004
Date Extracted: 508_041220
Date Analyzed: 1/17/2005
Report Date: 1/7/2005
Analyst: CMH
Supervisor:

EPA Method 508.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	PCBs/Toxaphene						
36	TOXAPHENE	ND	ug/L	2	2	3	
173	AROCLOR 1221	ND	ug/L	20	20		
174	AROCLOR 1232	ND	ug/L	0.5	0.5		
175	AROCLOR 1242	ND	ug/L	0.5	0.3		
176	AROCLOR 1248	ND	ug/L	0.1	0.1		
177	AROCLOR 1254	ND	ug/L	0.1	0.1		
178	AROCLOR 1260	ND	ug/L	0.2	0.2		
180	AROCLOR 1016	ND	ug/L	0.1	0.1		

* An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
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J - Estimated value.

FORM: 80C97

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CARBAMATES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075

Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: Intake
County:

Field ID: 74115
Lab Number: 04624845
Date Collected: 12/8/2004
Date Extracted: 531_041215
Date Analyzed: 12/15/2004
Report Date: 12/20/2004
Analyst: TW
Supervisor: PM

EPA Method 531.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
146	CARBOFURAN	ND	ug/L	1.8	1.8	40	
148	OXYMAL	ND	ug/L	4	4.0	200	
	EPA Unregulated						
141	3-HYDROXYCARBOFURAN	ND	ug/L	2	2.0		
142	ALDICARB	ND	ug/L	1	1.0		
143	ALDICARB SULFONE	ND	ug/L	1.6	1.6		
144	ALDICARB SULFOXIDE	ND	ug/L	1	1.0		
145	CARBARYL	ND	ug/L	2	2.0		
147	METHOMYL	ND	ug/L	1	4.0		
	State Unregulated - Other						
326	PROPOXUR (BAYGON)	ND	ug/L	1			
327	METHIOCARB	ND	ug/L	4			

* - An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
** - Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
*** - If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
**** - Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

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SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075

Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: Intake
County:

Field ID: 74115
Lab Number: 04624845
Date Collected: 12/8/2004
Date Extracted: 525_041220
Date Analyzed: 12/21/2004
Report Date: 1/5/2005
Analyst: CMH
Supervisor:

EPA Method 525.2 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
33	ENDRIN	ND	ug/L	0.02	0.02	2	
34	LINDANE (BHC - GAMMA)	ND	ug/L	0.04	0.04	0.2	
35	METHOXYCHLOR	ND	ug/L	0.2	0.2	40	
117	ALACHLOR	ND	ug/L	0.4	0.4	2	
119	ATRAZINE	ND	ug/L	0.2	0.2	3	
120	BENZO(A)PYRENE	ND	ug/L	0.04	0.04	0.2	
122	CHLORDANE, TECHNICAL	ND	ug/L	0.4	0.4	2	
124	DI(ETHYLHEXYL)-ADIPATE	ND	ug/L	1.3	1.3	400	
125	DI(ETHYLHEXYL)-PHTHALATE	ND	ug/L	1.3	1.3	6	
126	HEPTACHLOR	ND	ug/L	0.08	0.08	0.4	
127	HEPTACHLOR EPOXIDE (A&B)	ND	ug/L	0.04	0.04	0.2	
128	HEXACHLOROBENZENE	ND	ug/L	0.2	0.2	1	
129	HEXACHLOROCYCLO-PENTADIENE	ND	ug/L	0.2	0.2	50	
133	SIMAZINE	ND	ug/L	0.15	0.15	4	
	EPA Unregulated						
118	ALDRIN	ND	ug/L	0.2	0.2		
121	BUTACHLOR	ND	ug/L	0.4	0.4		
123	DIELDRIN	ND	ug/L	0.2	0.2		
130	METOLACHLOR	ND	ug/L	1	1.0		
131	METRIBUZIN	ND	ug/L	0.2	0.2		
132	PROPACHLOR	ND	ug/L	0.2	0.2		
	State Unregulated - Other						
179	BROMACIL	ND	ug/L	0.2	0.2		
183	PROMETON	ND	ug/L	0.2	0.2		
190	TERBACIL	ND	ug/L	0.2	0.2		
202	DIAZINON	ND	ug/L	0.2	0.2		
208	EPTC	ND	ug/L	0.3	0.3		
232	4,4-DDD	ND	ug/L	0.2	0.2		
233	4,4-DDE	ND	ug/L	0.2	0.2		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA. NPDWR State Advisory Level (SAL) for Unregulated compounds
A blank MCL or SAL value indicates a level is not currently established.
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****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero
J - Estimated value.

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(800) 755-9295
(360) 757-1400 - FAX (360) 757-1402

HERBICIDES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075

Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: Intake
County:

Field ID: 74115
Lab Number: 04624845
Date Collected: 12/8/2004
Date Extracted: 515_041217
Date Analyzed: 1/5/2005
Report Date: 1/7/2005
Analyst: CMH
Supervisor:

EPA Method 515.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
37	2,4 - D	ND	ug/L	0.2	0.2	70	
38	2,4,5 - TP (SILVEX)	ND	ug/L	0.4	0.4	50	
134	PENTACHLOROPHENOL	ND	ug/L	0.08	0.08	1	
137	DALAPON	ND	ug/L	2	2	200	
139	DINOSEB	ND	ug/L	0.4	0.4	7	
140	PICLORAM	ND	ug/L	0.2	0.2	500	SEE COVER NOTE
	EPA Unregulated						
136	DICAMBA	ND	ug/L	0.2	0.2		
	State Unregulated						
135	2,4 DB	ND	ug/L	1	1.0		
136	2,4,5 T	ND	ug/L	0.4	0.4		
220	BENTAZON	ND	ug/L	0.5	0.5		
221	DICHLORPROP	ND	ug/L	0.5	0.5		
223	ACTIFLORFIN	ND	ug/L	2	2.0		
225	DACTHAL (DCPA)	ND	ug/L	0.1	0.1		
226	3,5 - DICHLOROBENZOIC ACID	ND	ug/L	0.5	0.5		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NFDWH. State Advisory Level (SAL) for Unregulated compounds
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value

Allen Frouch

Allen F@EdgeAnalytical.com

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The lab you can trust!

11525 Knudson Rd.
Burlington, WA 98233
(800) 755-9295
(360) 757-1400 - FAX (360) 757-1402

SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: Intake
County:

Reference Number: 04-12075

Project: 74115/74116

Field ID: 74115
Lab Number: 04624845
Date Collected: 12/8/2004
Date Extracted: 508_041220
Date Analyzed: 12/22/2004
Report Date: 1/5/2005
Analyst: CMH
Supervisor: JW

EPA Method 508.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	PCBs/Toxaphene						
36	TOXAPHENE	ND	ug/L	2	2	3	
173	AROCLOR 1221	ND	ug/L	20	20		
174	AROCLOR 1232	ND	ug/L	0.5	0.5		
175	AROCLOR 1242	ND	ug/L	0.5	0.3		
176	AROCLOR 1248	ND	ug/L	0.1	0.1		
177	AROCLOR 1254	ND	ug/L	0.1	0.1		
178	AROCLOR 1260	ND	ug/L	0.2	0.2		
180	AROCLOR 1016	ND	ug/L	0.1	0.1		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero
J - Estimated value

EDGE ANALYTICAL

Reference Number: 04-12075
Lab Number: 04624846
Report Date: 1/6/2005

SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
234	4,4-DDT	ND	ug/L	0.2	0.2		
236	CYANAZINE	ND	ug/L	0.2	0.2		
239	MALATHION	ND	ug/L	0.2	0.2		
240	PARATHION	ND	ug/L	0.2	0.2		
243	TRIFLURALIN	ND	ug/L	0.2	0.2		
	- PAHs						
96	NAPTHALENE	ND	ug/L	0.1	0.1		
154	FLUORENE	ND	ug/L	0.2	0.2		
244	ACENAPHTHYLENE	ND	ug/L	0.2	0.2		
245	ACENAPHTHENE	ND	ug/L	0.2	0.2		
246	ANTHRACENE	ND	ug/L	0.2	0.2		
247	BENZ(A)ANTHRACENE	ND	ug/L	0.1	0.1		
248	BENZO(B)FLUORANTHENE	ND	ug/L	0.2	0.2		
249	BENZO(G,H,I)PERYLENE	ND	ug/L	0.2	0.2		
250	BENZO(K)FLUORANTHENE	ND	ug/L	0.2	0.2		
251	CHRYSENE	ND	ug/L	0.2	0.2		
252	DIBENZO(A,H)ANTHRACENE	ND	ug/L	0.2	0.2		
253	FLUORANTHENE	ND	ug/L	0.2	0.2		
255	INDENO(1,2,3-CD)PYRENE	ND	ug/L	0.2	0.2		
256	PHENANTHRENE	ND	ug/L	0.2	0.2		
257	PYRENE	ND	ug/L	0.2	0.2		
	- Phthalates						
258	BENZYL BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
259	DI-N BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
260	DIETHYL PHTHALATE	ND	ug/L	0.6	0.6		
261	DIMETHYL PHTHALATE	ND	ug/L	0.6	0.6		

*: An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**: Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated contaminants
A blank MCL or SAL value indicates a level is not currently established.
***: If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
****: Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J: Estimated value

Appendices II

WWBWC Office Well Results

In following order:

- WWBWC Office well "Rusty Water" Baseline Chemistry Testing

Appendices II: WWBWC Office Well "Rusty Water Event". Original Report.

4/11/2005

12:58 pm

DRAFT: WAITING REVIEW AND APPROVAL FROM ODEQ.

Robert J. Bower

2004-5 HBDIC Recharge Project Monitoring

Water Quality Event:

Narrative: On Monday, April 11, 2005 at approximately 10:30 am it was brought to my attention that the WWBWC office toilets and sinks were running water, colored a rusty-brown color. With the WWBWC office well directly downgradient from the recharge project, it gave us reason for concern. A water sample was collected (men's bathroom toilet) and basic water quality parameters measured (see table results below). The toilets were flushed (probably 5-10 times each) and faucets run (about 1 minute) and the rusty water cleared back to what appears to be "normal" for our facility. I (Bob Bower) immediately went and sampled our nearest recharge sampling well (OWRD McKnight Well) as well as at the recharge site (intake, obs well #1, and GW-40 upgradient of project) and the results are shown below. None of the other locations showed the rusty-brown water during the sampling.

Site	Time	Specific Conductivity (us)	Turbidity (ntu)	Temp	Static Level (feet)
WWBWC Office Water	**10:50**	**137.1**	**341**	**N/A**	**N/A**
McKnight Obs Well	**11:50**	**281.5**	**4**	**13.8**	**17.75**
Recharge OBS Well #1	**12:20**	**67.8**	**7**	**10.3**	**18.17**
Intake Water (White Ditch)	**12:05**	**61.0**	**4.0**	**9.0**	**N/A**
OBS Well #40 (upgradient of project)	**12:35**	**66.7**	**7.0**	**11.4**	**N/A**

Overview:

Last year, about 3-4 weeks into the project's operation (which is where we are at right now in this season's operation window) the WWBWC toilets/sinks also displayed a rusty water that quickly cleared up after several flushes. At the time, our director Brian Wolcott said that he had seen that in the toilets/sink water before (he has been at these office for approximately 8 years). From this information I was not clear that the rusty water was a fairly normal occurrence at the WWBWC office (linked to the seasonal operation of the irrigation ditches (White Ditch between WWBWC office and recharge) or was connected to the recharge site operations. With that information, I

decided to keep an eye on it for this years operation and focus on quantifying the “event” to report in our water quality sampling to ODEQ.

Potential Source:

When HBDIC was enlarging the current spreading basins this last winter, I was able to walk in a 15-20' deep trench and do an inspection of the subsurface materials. I did notice a rust colored precipitate (in the vadose zone) on some of the cropping of rock. I took a sample (and pictures) and have them stored here at the WWBWC office.

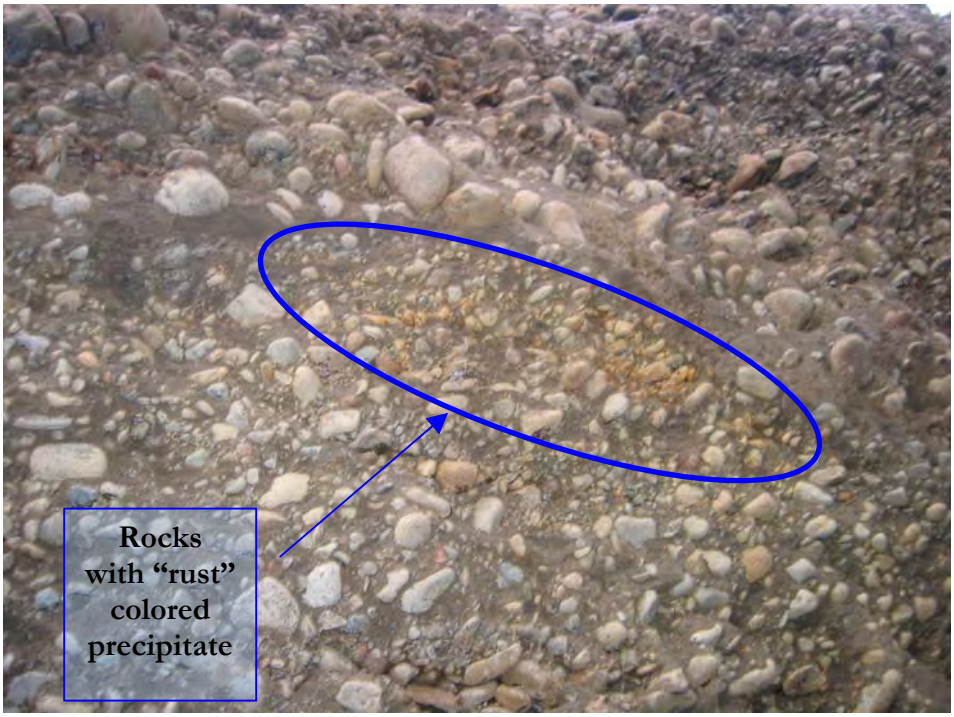


Figure 1. Band of "rust colored" rocks.

Figure 2. (2/8/5) Photo taken in trench created while constructing spreading basin. "Rust colored rocks clearly evident in trench bottom. (Dog "Kenai" in picture for scale).

After talking with Kevin Lindsey (K/J Inc.) we thought the most likely reason that this rust colored rocks were present was that it was a precipitate formed from anaerobic processes from

when this area was submerged in water (e.g. preferential flow path from old river bed, or irrigation water or precipitation infiltration). Also notice in figure 2 that the spreading basin construction process also produces some disturbance of the subsurface rocks which also may be "washed" through the system. Figure 3 shows a similar discoloration of the rocks along the Walla Walla River, where higher winter flows had receded showing a similar rusty-brown precipitate on the channel bed.

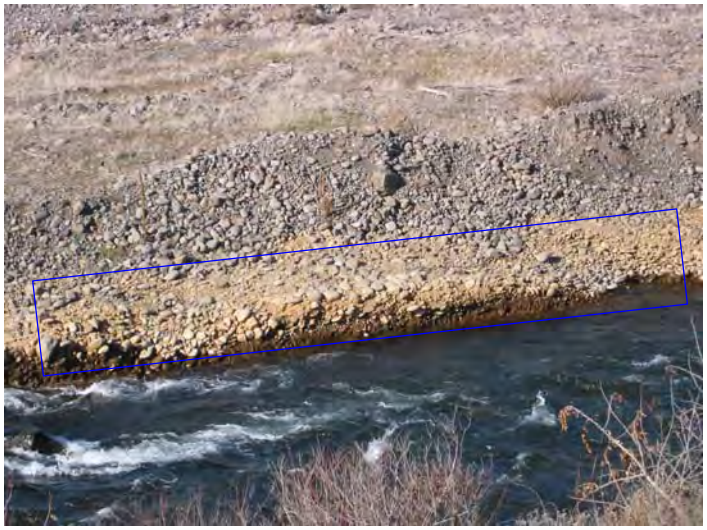


Figure 3. "Rusty-brown" rocks where high water has receded suggesting a possible aerobic-anaerobic process that creates this precipitate.

Source Assessment:

The fact that this precipitate has shown up in the WWBWC in the past (but not this concentrated) suggests that there may be many different mechanisms that create this type of colored water event.

1. Near the recharge site, there are been many new acres of wine grape and cherry orchards being installed over the last 6-12 months. With the tilling and the ground and the recent rainfall and addition of irrigation to these new fields, it is possible that this precipitate may be from agricultural sources. The fact that this precipitate had shown up in the WWBWC well before the recharge project, also supports the idea of other contributing sources.
2. Ditch operations. We have shown in the first year of the HBDIC recharge project how much of an impact that water infiltrating from the White ditch has on the aquifer levels. It is possible that this 'precipitate' is washed through from the ditch system on an annual basis.
3. Recharge project construction and initial 'flushing' could be the source of this water. We know that recharge water probably does not flow as much as it displaces water. Thus a "plume" of recharge water would take some time (in this case 3 weeks) to move downgradient. The fact that it appears to be a very short-lived 'wave' that moves through the system suggests that it may be related to an event like the flushing of the subsurface below the recharge project. If this is true, then this precipitate should only show up once for every recharge projects installation (rebuilt large this winter, and originally built last year.)
4. The precipitate may also be from the WWBWC well casing or some well activity being conducted in the area. If the static level in the well comes up rapidly it may dislodge the

rust that has accumulated on the casing and this would show up in the water. Also there has been some iron-issues reported to OWRD in an area just NE of the WWBWC office area. This event may be tied to these chronic issues as well.

Water Quality Impacts Assessment:

1. This "event" appears to have been very short lived, with between 5-10 flushes of the toilet appearing to clear the water back to normal conditions. This would logically support that this event is linked to a one-time flushing event of the newly constructed recharge spreading basins and not be a chronic operations problem. It would also mean that this precipitate would move outward from the project and probably be diluted as it moved further and further from the project site (reduced concentration).
2. Without the benefits of a water quality analysis *(see action items below)*, it appears that the rusty-colored water may be linked to the subsurface precipitate that is endemic to the shallow aquifer system. While the recharge construction may create a one-time increase in this precipitate, it is an event that appears to also have happened in the past and may be part of an annual cycle.
3. The WWBWC office well is very shallow relative to unconfined water table's surface. At times, during the summer the well actually goes dry when the lawn sprinklers are running, suggesting a well skimming the water table surface (about 40 feet deep). If this precipitate moves along the top of the unconfined system (like scum on water surface) it may show up in downgradient springs or at the top of the downgradient groundwater.

HBDIC Project Monitoring Action Steps (with approval from ODEQ):

1. Send WWBWC office sample in to Kuo testing for water quality analysis. Have it tested for mineral content and other parameters (ODEQ?)
2. Continue to normal monitor water quality as described in Recharge project's limited license. If the precipitate appears again, immediately collect samples and contact ODEQ in Pendleton for further instructions.

Kuo Testing Labs

Appendices II Water Quality Results for WWBWC "Rusty water" Analysis

Sample Number	Customer site ID	Analysis	Results	MDL	Units	Lab Person
75948	Water (WWBWC Office well)	Boron	ND	0.0090	mg/L	Wang
75948	Water (WWBWC Office well)	Calcium	11.2	0.0020	mg/L	Wang
75948	Water (WWBWC Office well)	Magnesium	4.6	0.0016	mg/L	Wang
75948	Water (WWBWC Office well)	Phosphorus	0.06	0.0300	mg/L	Wang
75948	Water (WWBWC Office well)	Potassium	3.3	0.0580	mg/L	Wang
75948	Water (WWBWC Office well)	Sodium	5.8	0.3140	mg/L	Wang
75948	Water (WWBWC Office well)	Copper	0.01	0.0023	mg/L	Wang
75948	Water (WWBWC Office well)	Iron	6.3	0.0040	mg/L	Wang
75948	Water (WWBWC Office well)	Managanese	0.01	0.0010	mg/L	Wang
75948	Water (WWBWC Office well)	Zinc	<0.015	0.0150	mg/L	Wang
75948	Water (WWBWC Office well)	Sulfur	0.81	0.0600	mg/L	Wang

Appendices III

OWRD Historical Wells Data

In following order:

Map of processed OWRD's State Observation Wells (SOW)

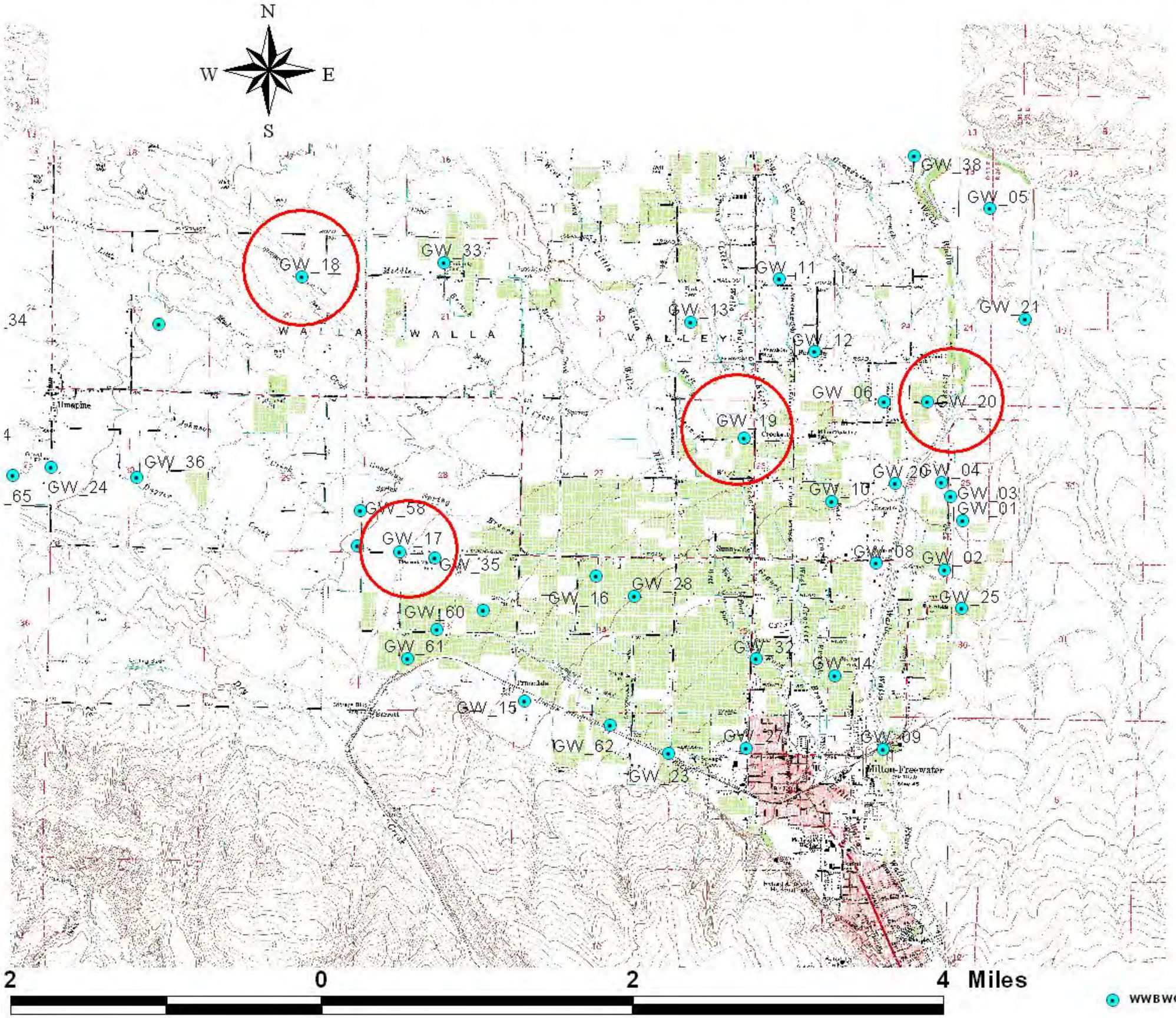
Well information and graphs for SOW# 853

Well information and graphs for SOW# 851

Well information and graphs for SOW#849

Well information and graphs for SOW#850

Map of Oregon State Observation Wells (processed)



GW-17 McKnight Well

OWRD OBSERVATION WELL

State Observation Well (SOW)

Wellnet Id	Name	Drilled Depth (feet)	SOW	Well Log	UMAT #	Recorder		Status	TWNSP	N/S	RANGE	E/W	SECTION	1/4	GPS Elevation (feet)	GPS Accuracy (feet)	Current Owner	Spoke with Owner
GW -17	McKnight	37 (27) ?	853		UMAT 4790	Could		open/dry	6	N	35	E	28	CCD	738	21	unknown	no

WWBWC only 27 feet

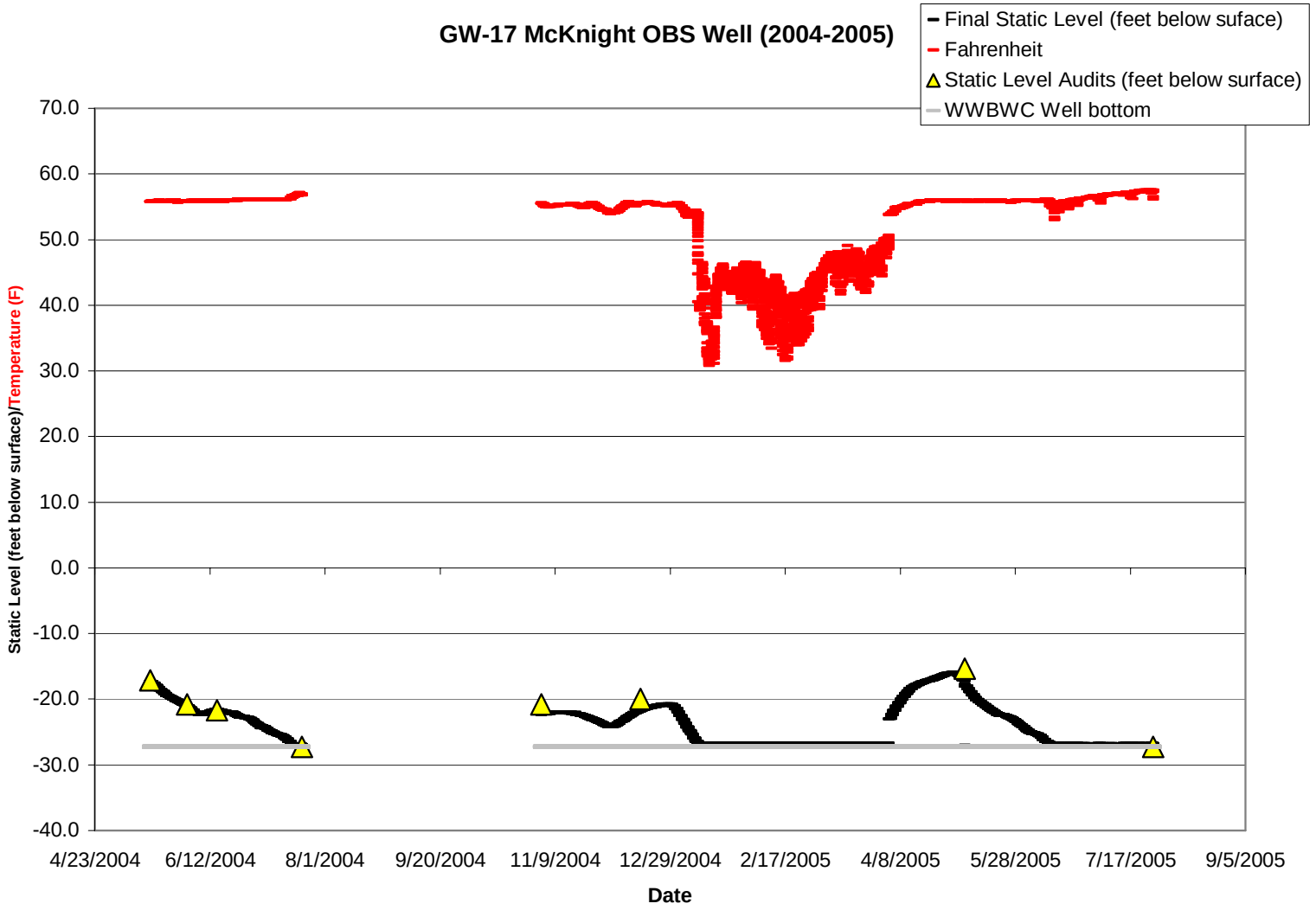
UMAT 50357 does not exist

Estimated Elevation **817.2**

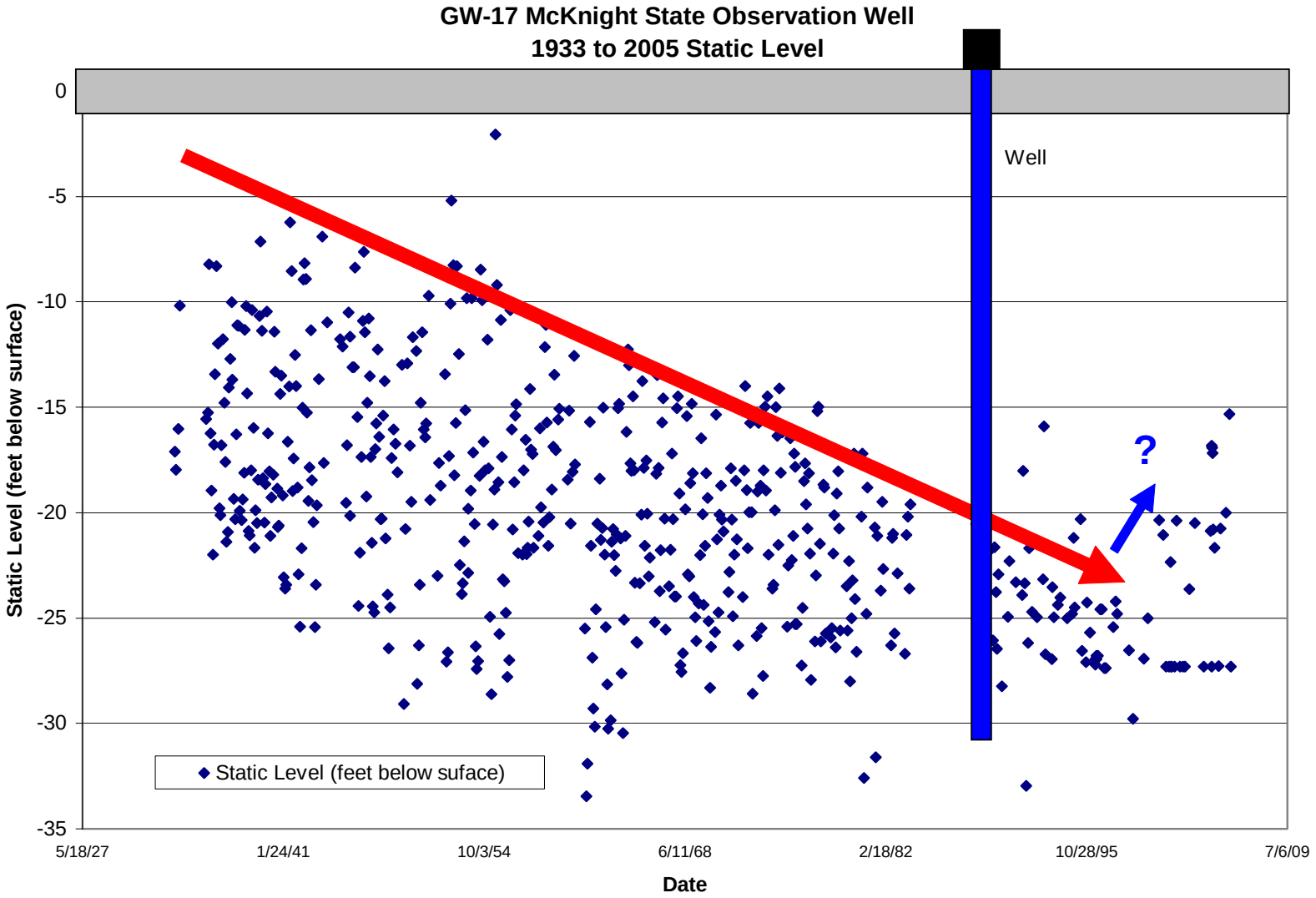
*GPS WAY OFF

Static Measurements and Deployment notes

Date	Hour	Well ID	Name	TAPE READING	TOG Adjustment	WATER DEPTH	Water Depth	Logger Data			Estimated Cable Length	Measured Cable Length (feet)	PUMP STATUS	Conductivity	Water Temp (F)	PUMP SIZE	COMMENTS
				MNT POINT (feet)	WATER LEVEL		Graphing	Date	Time	Logger (feet water)							
7/6/00	10:43	GW-17	McKnight	20.4	0.0	20.4	-20.4						open				
10/9/00	13:45	GW-17	McKnight	21.1	0.0	21.1	-21.1						open				
1/17/01	10:01	GW-17	McKnight	DRY	0.0	0.0	0.0						open				
3/29/01	11:47	GW-17	McKnight	DRY	0.0	0.0	0.0						open				
6/20/01	8:48	GW-17	McKnight	22.4	0.0	22.4	-22.4						open				
7/17/01		GW-17	McKnight	Dry	0.0	0.0	0.0						open				
7/31/01	9:02	GW-17	McKnight	dry	0.0	0.0	0.0						open				
8/14/01	14:15	GW-17	McKnight	dry	0.0	0.0	0.0						open				
10/30/01	8:48	GW-17	McKnight	20.4	0.0	20.4	-20.4						open				sample
12/13/01		GW-17	McKnight	0.0	0.0	0.0	0.0						open				
3/11/02		GW-17	McKnight	dry	0.0	0.0	0.0						open				
5/21/02		GW-17	McKnight	Dry	0.0	0.0	0.0						open				
7/9/02	12:15	GW-17	McKnight	23.6	0.0	23.6	-23.6						open				Chem sample/no minitroll
11/4/02	15:00	GW-17	McKnight	20.5	0.0	20.5	-20.5						open				
3/19/03		GW-17	McKnight	Dry	0.0	0.0	0.0						open				
10/27/03	9:45	GW-17	McKnight	20.9	0.0	20.9	-20.9						open				
4/8/04	18:25	GW-17	McKnight	dry	0.0	0.0	0.0						open	286.1	15		
5/12/04	16:30	GW-17	McKnight	16.8	0.0	16.8	-16.8						open				
5/14/04	7:10	GW-17	McKnight	16.9	0.0	16.9	-16.9						open				
5/17/04	18:25	GW-17	McKnight	17.2	0.0	17.2	-17.2	5/17/04	18:51	9.71	26.9		open				
6/2/04	10:30	GW-17	McKnight	20.8	0.0	20.8	-20.8	6/2/04	10:51	6.01	26.8		open				
6/15/04	14:05	GW-17	McKnight	21.7	0.0	21.7	-21.7	6/15/04	12:51	5.34	27.0		open	279.2	15.5		
7/22/04	10:55	GW-17	McKnight	27.3	0.0	27.3	-27.3	7/22/04	10:51	0.05	27.3		open				Pulled logger
8/11/04	8:58	GW-17	McKnight	dry													
11/3/04	17:24	GW-17	McKnight	20.8	0.0	20.8	-20.8	11/3/04	17:55	4.68	25.4		open				
12/16/04	15:06	GW-17	McKnight	20.0	0.0	20.0	-20.0	12/16/04	14:55	5.36	25.4		open				
5/6/05	10:10	GW-17	McKnight	15.3	0.0	15.3	-15.3	5/6/05	10:41	9.23	24.6		open	270.4	14.5		changed cable (for stainless steel)
7/27/05	17:00	GW-17	McKnight	DRY	0.0	0.0	0.0	7/27/05	16:41	0.10			open				
9/7/05	9:45	GW-17	McKnight	DRY	0.0	0.0	0.0						open				
							Cable Length 1st				**27.0**						
							Cable Length 2nd				**25.1**						



Oregon State Observation well #853



Oregon State Observation well #853

GW-19 E. Ransom Well

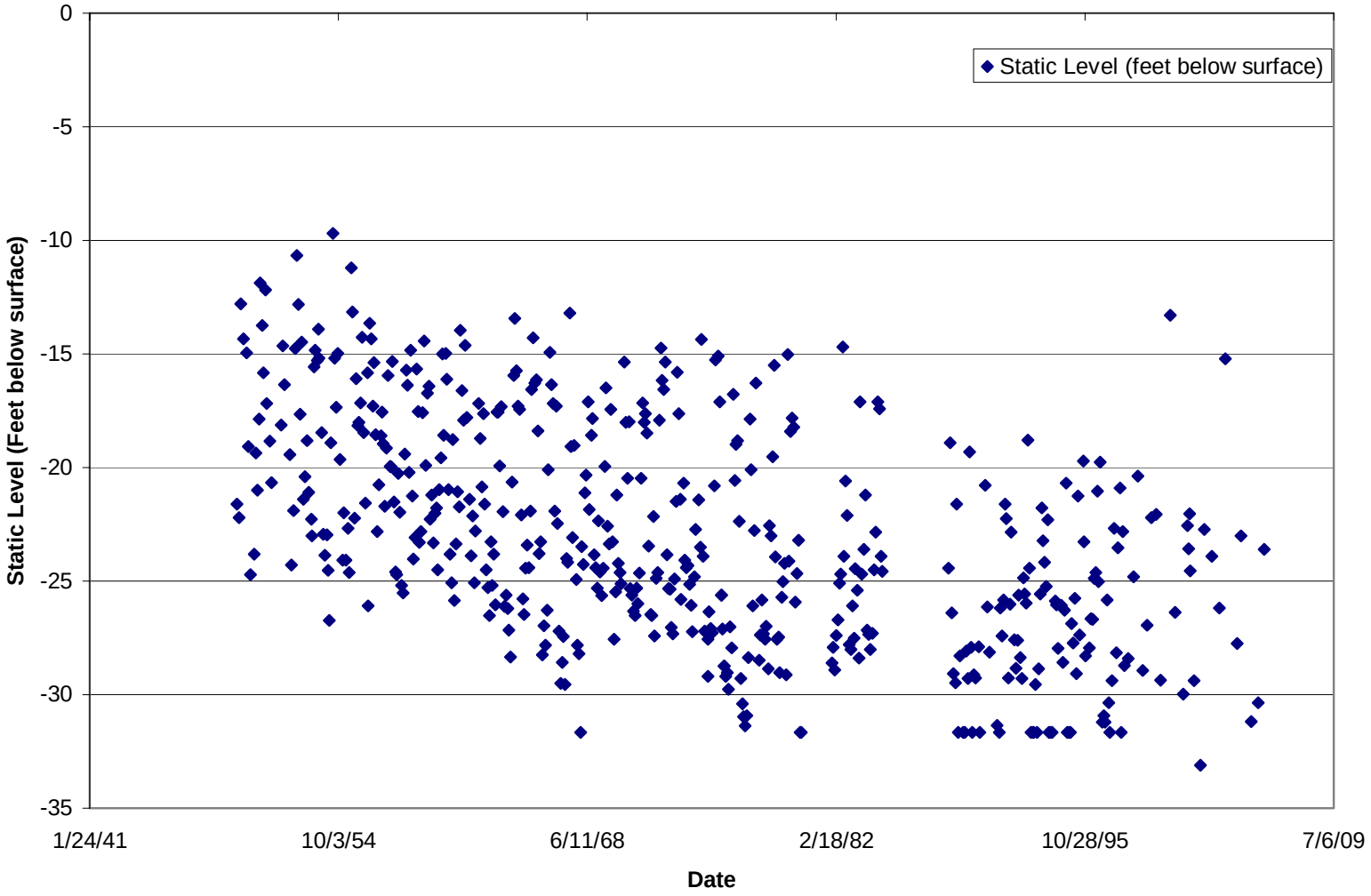
OWRD OBSERVATION WELL State Observation Well (SOW)

Wellnet Id	Name	Drilled Depth (feet)	SOW	Well Log	UMAT #	Recorder	Type	Status	TWNSP	N/S	RANGE	E/W	SECTION	1/4	GPS Elevation (feet)	GPS Accuracy (feet)	Current Owner	Spoke with Owner
GW -19	E.Ransom	110	851	Yes	UMAT 4691	Yes	IRR		6	N	35	E	26	BAD	877	16		Yes

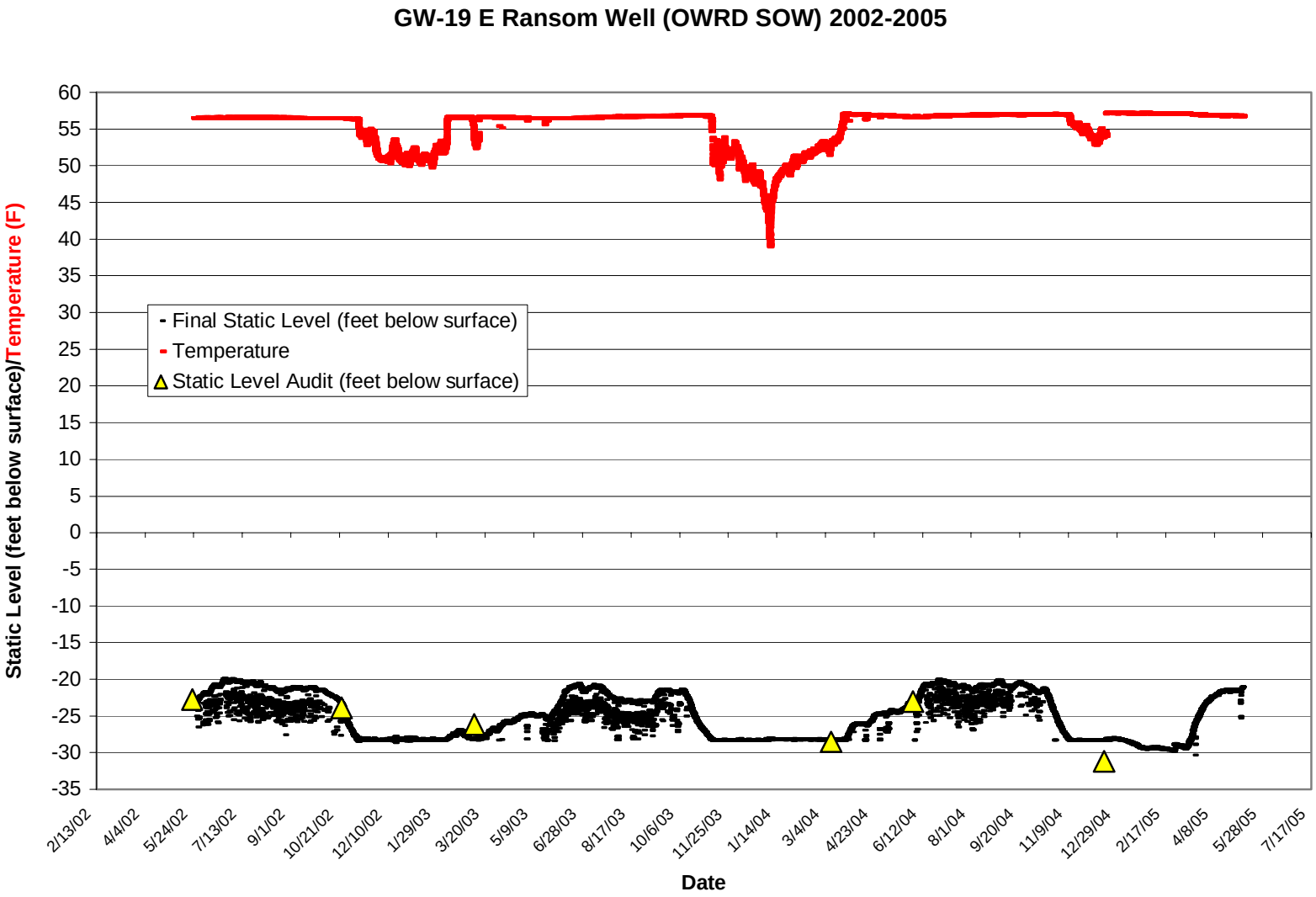
Measuring Hand Dug portion of well only

Static Measurements and Deployment notes

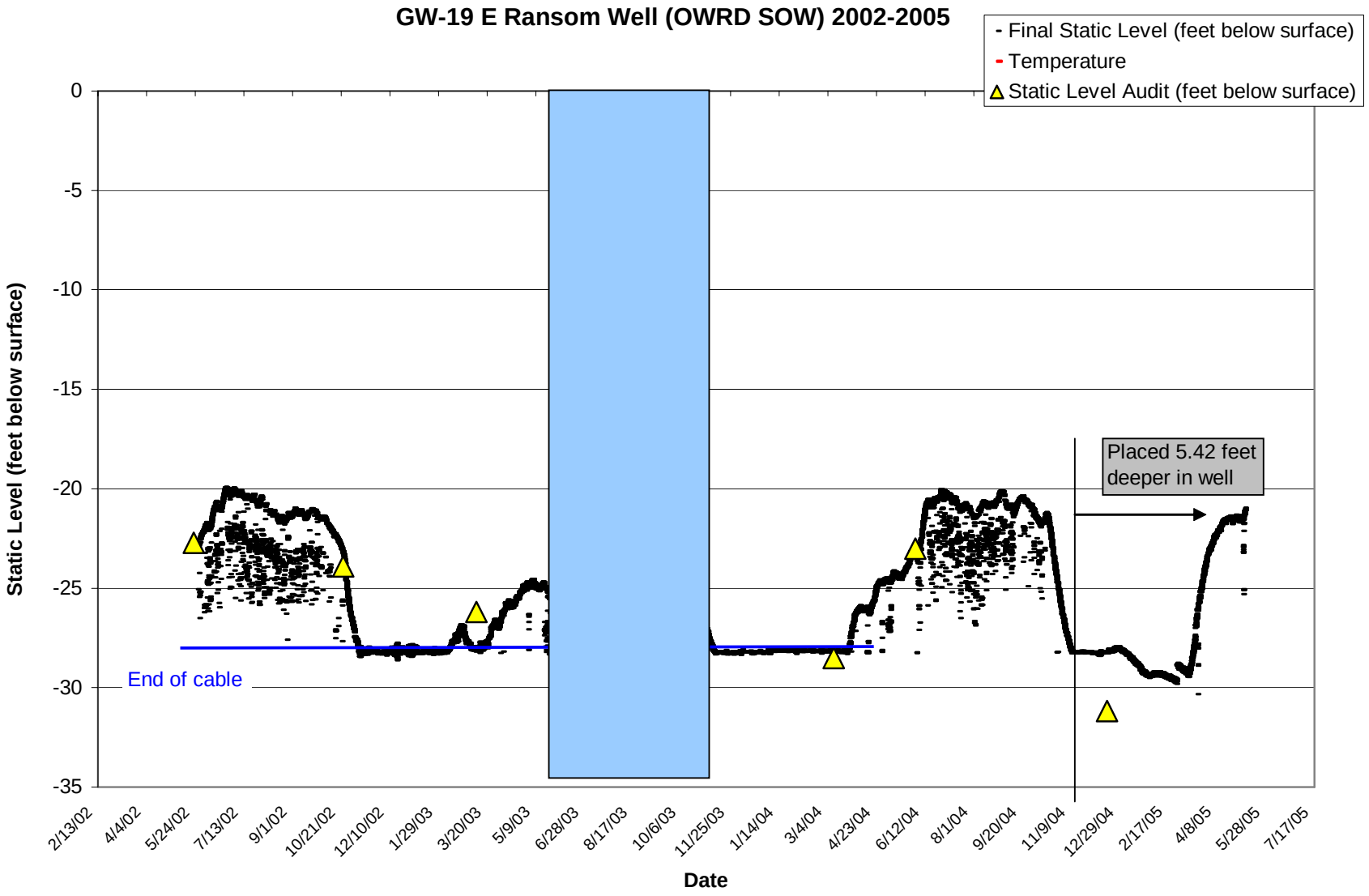
Date	Hour	Well ID	Name	TAPE READING	TOG Adjustment	WATER DEPTH	Water Depth	Logger Data			Estimated Cable Length	Measured Cable Length (feet)	PUMP STATUS	Conductivity	Water Temp (F)	PUMP SIZE	COMMENTS
				MNT POINT (feet)	WATER LEVEL		Graphing	Date	Time	Logger (feet water)							
7/6/00	11:15	GW-19	E Ransom	16.7	-3.4	13.3	-13.3										
10/9/00	14:22	GW-19	E. Ransom	29.8	-3.4	26.4	-26.4										
1/17/01	10:36	GW-19	E. Ransom	dry	-3.4	dry											
3/29/01	12:26	GW-19	E. Ransom	33.4	-3.4	30.0	-30.0										
6/20/01	9:32	GW-19	E. Ransom	26.0	-3.4	22.6	-22.6						off				
7/17/01		GW-19	E. Ransom	27.0	-3.4	23.6	-23.6						on				
7/31/01	9:35	GW-19	E. Ransom	25.4	-3.4	22.0	-22.0										
8/14/01	13:20	GW-19	E. Ransom	28.0	-3.4	24.6	-24.6						on				
10/30/01	0:00	GW-19	E. Ransom	32.8	-3.4	29.4	-29.4						off				sample
12/13/01	N/A	GW-19	E. Ransom	0.0	-3.4	-3.4							off				
3/11/02		GW-19	E. Ransom	36.5	-3.4	33.1	-33.1										
5/22/02	15:00	GW-19	E. Ransom	26.1	-3.4	22.7	-22.7	5/22/02	15:00	5.33	28.06						
10/23/02	13:42	GW-19	E. Ransom	27.3	-3.4	23.9	-23.9	10/23/02	13:00	4.16	28.06		off				subtract 1.23 feet from minitroll data, where it mounts on
3/19/03	14:15	GW-19	E. Ransom	29.6	-3.4	26.2	-26.2	3/9/03	14:00	0.09	26.28	29.6	off				29.6 cable length
7/24/03	8:30	GW-19	E. Ransom	23.0	-3.4	19.6	-19.6	7/24/03	8:00	5.93		32.7	on				pump on disgard
10/27/03	10:30	GW-19	E. Ransom	40.1	-3.4	36.7		10/27/03	10:00	1.59			off				can not confirm
3/10/04	10:10	GW-19	E. Ransom	31.2	-3.4	27.8	-27.8	3/10/04	10:08	0.06	27.81		off				
6/2/04	14:00	GW-19	E. Ransom	26.4	-3.4	23.0	-23.0	6/2/04	14:08	5.08	28.10		off	114.8	16.5		
12/16/04	9:30	GW-19	E. Ransom	34.6	-3.4	31.2	-31.2	12/16/04	9:08	0.01	31.19		off				Logger put next to casing, adjusted data to -5.42 feet further down
5/6/05	11:30	GW-19	E. Ransom	33.8	-3.4	30.4	-30.4	5/6/05	9:59	7.22	37.57		?	105.1	14.7		thrown out, problem mmt
7/27/05	14:37	GW-19	E. Ransom		-3.4								on				
9/7/05	10:34	GW-19	E. Ransom	27.0	-3.4	23.6	-23.6										
										Cable Length	28.2						
										Cable Length	33.7						



Oregon State Observation Well# 851



State Observation Well # 851



State Observation Well # 851

GW-18 Courtney Well

OWRD OBSERVATION WELL

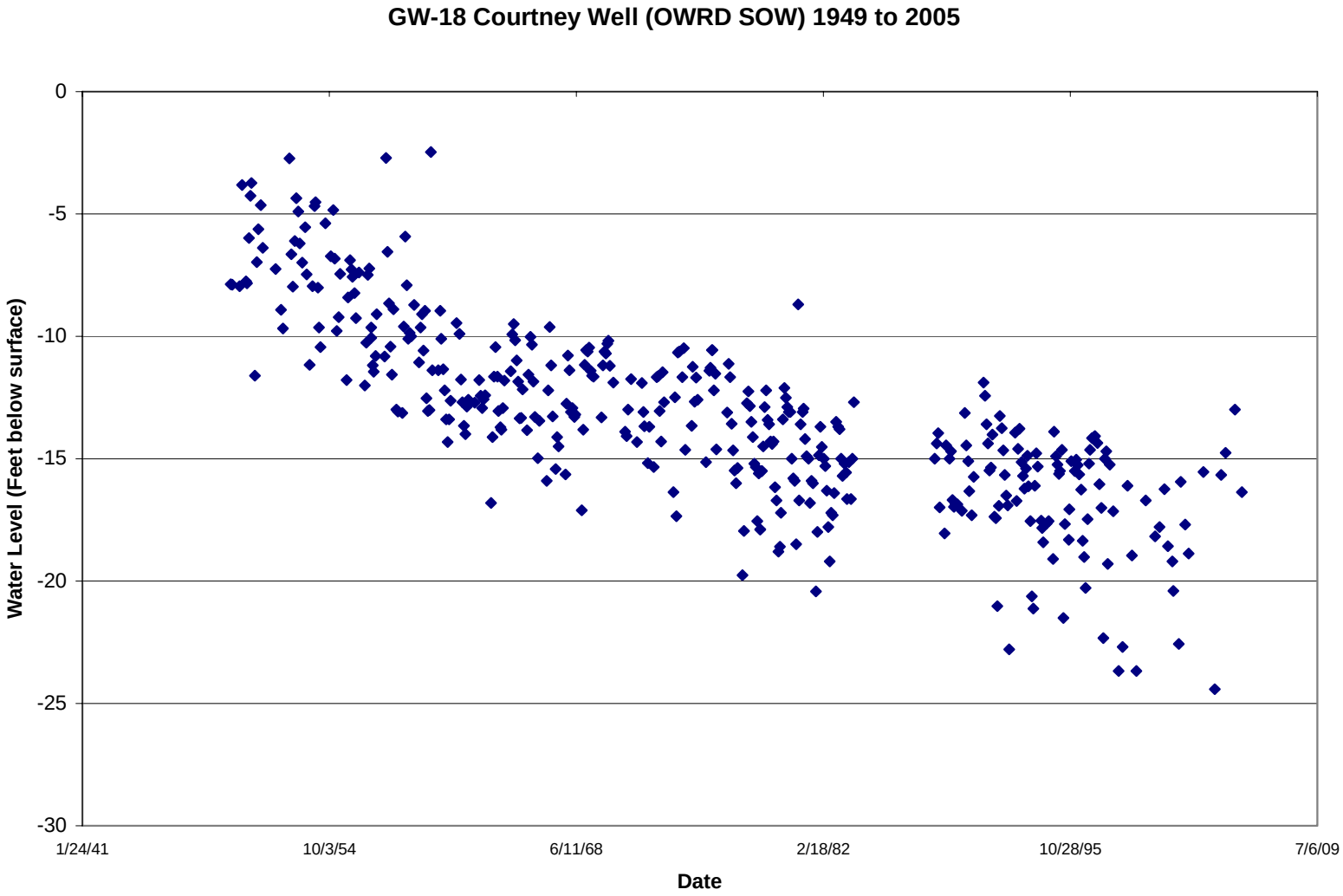
State Observation Well (SOW)

Wellnet Id	Name	Drilled Depth (feet)	SOW	Well Log	UMAT #	Recorder	Type	Status	TWNSP	N/S	RANGE	E/W	SECTION	1/4	GPS Elevation (feet)	GPS Accuracy (feet)	Current Owner	Spoke with Owner
GW -18	Courtney	17 (NO)	849		UMAT 50354	no	IRR		6	N	35	E	20	ACA	739	19		Yes

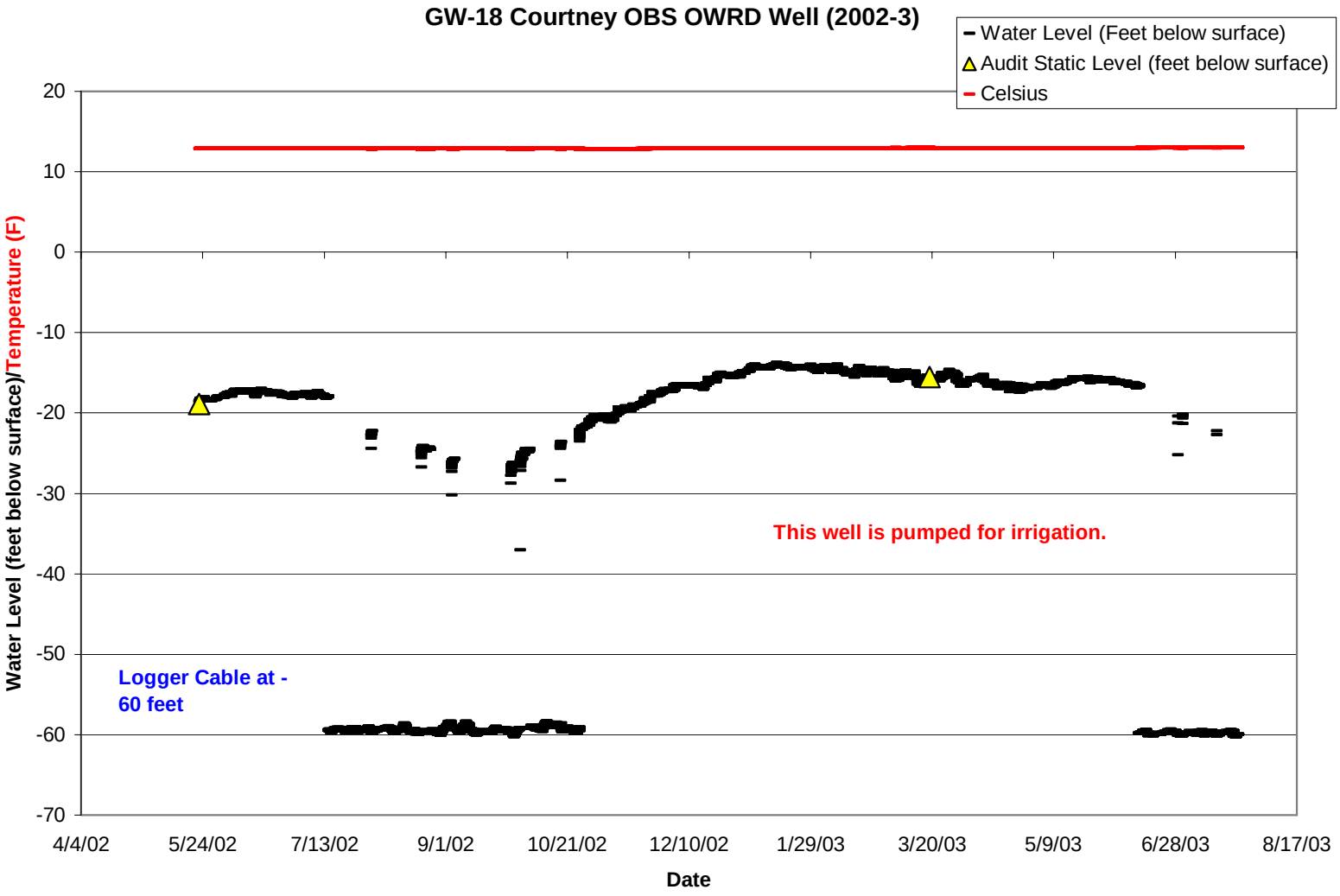
Estimated Elevation 760

Static Measurements and Deployment notes

Date	Hour	Well ID	Name	TAPE READING	TOG Adjustment	WATER DEPTH	Water Depth	Logger Data			Estimated Cable Length	Measured Cable Length (feet)	PUMP STATUS	Conductivity	Water Temp (F)	PUMP SIZE	COMMENTS
				MNT POINT (feet)	WATER LEVEL		Graphing	Date	Time	Logger (feet water)							
7/6/00	11:04	GW-18	Countney	18.2	0.0	18.2	-18.2										
10/9/00	14:03	GW-18	Courtney	17.8	0.0	17.8	-17.8										
1/17/01	10:18	GW-18	Courtney	16.2	0.0	16.2	-16.2						off				
3/29/01	12:09	GW-18	Courtney	18.6	0.0	18.6	-18.6						off				
6/20/01	9:05	GW-18	Courtney	19.2	0.0	19.2	-19.2						on				
7/17/01	N/A	GW-18	Courtney	20.4	0.0	20.4	-20.4						on				
7/31/01	9:07	GW-18	Courtney	50.0	0.0	50.0	-50.0						off				
8/14/01	14:04	GW-18	Courtney	51.9	0.0	51.9	-51.9						off				
10/30/01	9:05	GW-18	Courtney	22.6	0.0	22.6	-22.6										
12/13/01	N/A	GW-18	Courtney	16.0	0.0	16.0	-16.0						off				sample
3/11/02	N/A	GW-18	Courtney	17.7	0.0	17.7	-17.7					60	on				cable estimated 60'
5/22/02	15:00	GW-18	Courtney	18.9	0.0	18.9	-18.9	5/22/02	15:00	40.91	59.79		off				no chem
7/17/02	17:12	GW-18	Courtney	49.3	0.0	49.3	-49.3	7/17/02	17:00	0.15	49.45		on				
10/23/02	15:30	GW-18	Courtney	50.01	0.0	50.0	-50.0	10/23/02	14:00	-0.10	49.91		on				
3/19/03	14:34	GW-18	Courtney	15.55	0.0	15.6	-15.6	3/19/03	14:30	43.67	59.22	59.8	off				59.83 cable length
7/24/03	8:00	GW-18	Countney	54.38	0.0	54.4	-54.4	7/24/03	8:00	-0.93	53.45	**59.5**	on				59.5 cable Length (removed logger)
10/26/03	x	GW-18	Courtney	24.42	0.0	24.4	-24.4						off	428.2	15.9		
3/10/04	10:10	GW-18	Courtney	15.67	0.0	15.7	-15.7						off				
6/2/04	12:05	GW-18	Courtney	14.75	0.0	14.8	-14.8						off				
12/17/04	11:20	GW-18	Courtney	13.00	0.0	13.0	-13.0						on				
5/6/05	10:42	GW-18	Courtney	16.38	0.0	16.4	-16.4										
9/7/05	10:30	GW-18	Courtney	57.90	0.0	57.9	-57.9										
							Cable Length				**59.5**						



Oregon State Observation Well# 849



Oregon State Observation Well# 849

GW-20 G Ransom Well

OWRD OBSERVATION WELL

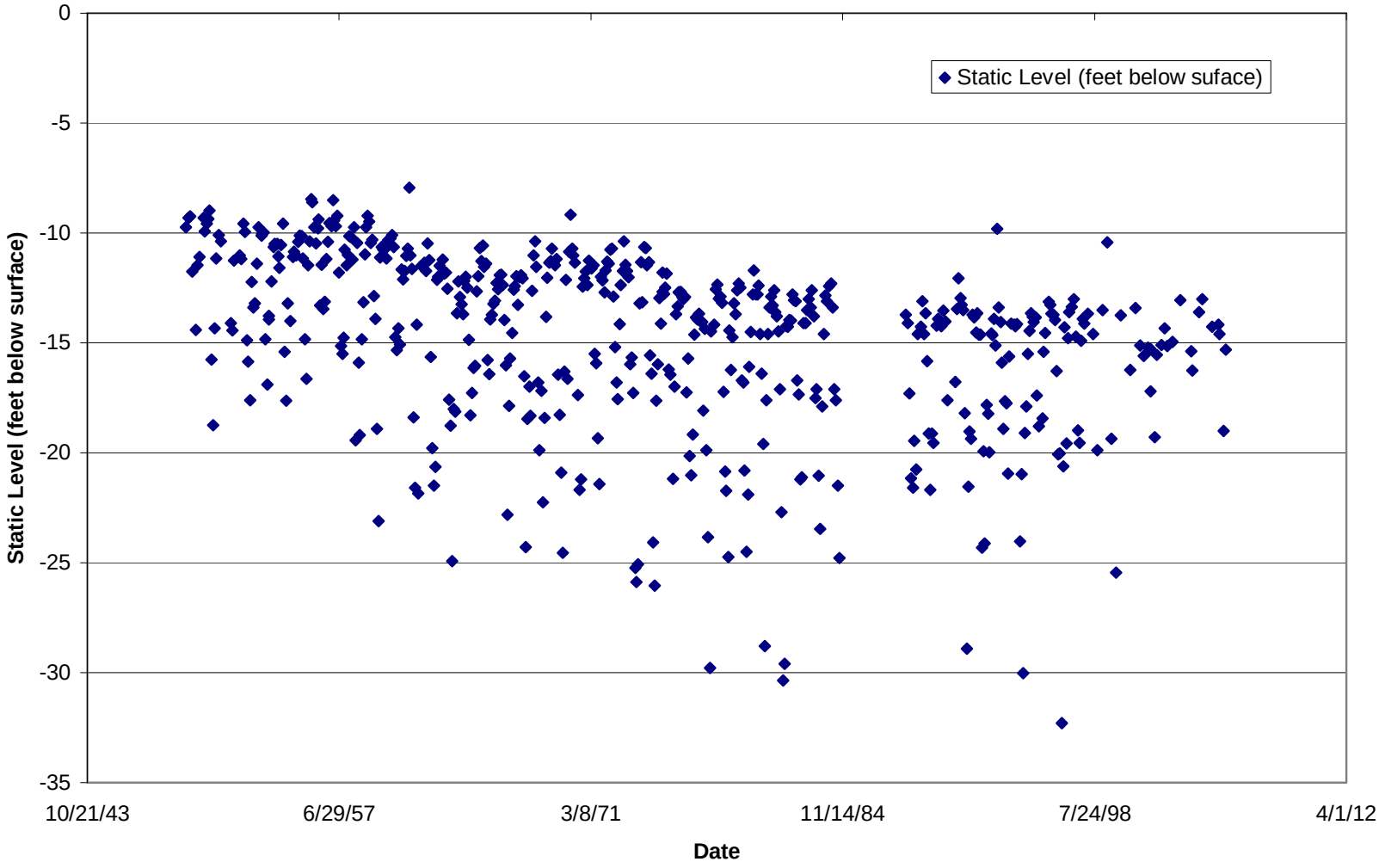
State Observation Well (SOW)

Wellnet Id	Name	Drilled Depth (feet)	SOW	Well Log	UMAT #	Recorder	Type	Status	TWNSP	N/S	RANGE	E/W	SECTION	1/4	GPS Elevation (feet)	GPS Accuracy (feet)	Current Owner	Spoke with Owner
GW -20	G. Ransom	165	850	Yes	UMAT 50356 (UMAT 4511)	Yes	IRR		6	N	35	E	24	DCC	889	16		Yes

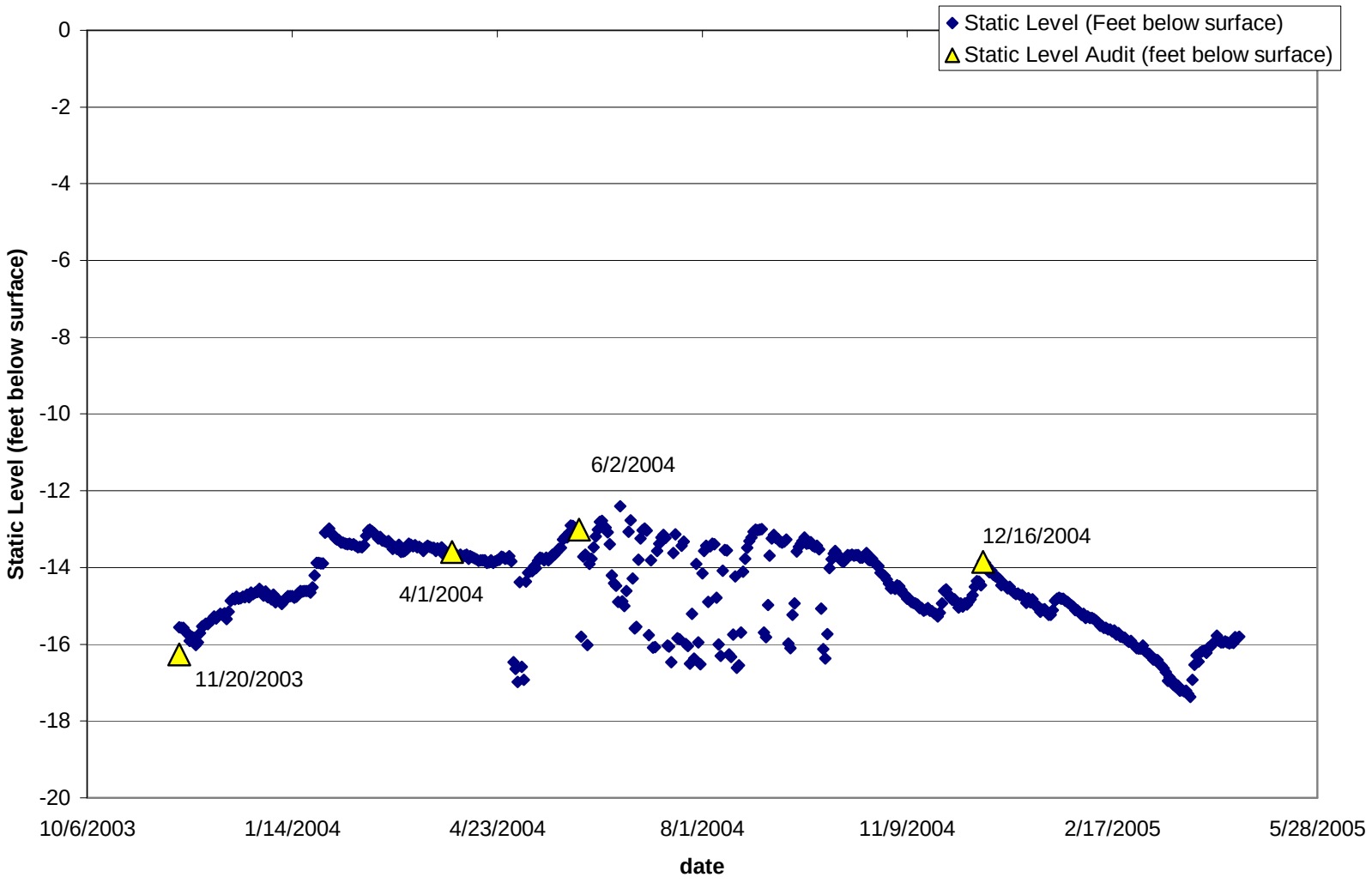
Static Measurements and Deployment notes

Date	Hour	Well ID	Name	TAPE READING	TOG Adjustment	WATER DEPTH	Water Depth	Logger Data			Estimated Cable Length	Measured Cable Length (feet)	PUMP STATUS	Conductivity	Water Temp (F)	PUMP SIZE	COMMENTS
				MNT POINT (feet)	WATER LEVEL		Graphing	Date	Time	Logger (feet water)							
7/6/00	11:45	GW -20	G Ransom	16.6	-0.4	16.2	-16.2										
10/9/00	14:22	GW -20	G Ransom	13.8	-0.4	13.4	-13.4										
1/17/01	10:43	GW -20	G Ransom	15.5	-0.4	15.1	-15.1										
3/29/01	12:32	GW-20	G Ransom	16.0	-0.4	15.6	-15.6										
6/20/01	9:40	GW-20	G Ransom	15.6	-0.4	15.2	-15.2						on				
7/17/01		GW-20	G Ransom	15.7	-0.4	15.3	-15.3						off				
7/31/01	10:55	GW-20	G Ransom	15.7	-0.4	15.3	-15.3										
8/14/01	12:50	GW-20	G Ransom	17.6	-0.4	17.2	-17.2						on				
10/30/01	9:40	GW-20	G Ransom	19.7	-0.4	19.3	-19.3						off				
12/13/01	N/A	GW-20	G Ransom	16.0	-0.4	15.6	-15.6						off				sample
3/11/02	14:35	GW-20	G Ransom	15.5	-0.4	15.1	-15.1										
5/22/02	14:00	GW-20	G Ransom	14.7	-0.4	14.3	-14.3	5/22/02	14:00	16.88	31.20						
7/9/02	13:35	GW-20	G Ransom	15.5	-0.4	15.1	-15.1	7/9/02	14:00	15.88	31.02		off				chem sample
10/23/02	8:00	GW-20	G Ransom	15.4	-0.4	15.0	-15.0	10/23/02	8:00	16.89	31.84	32.5					9.9 meters mini depth
3/19/03	13:30	GW-20	G Ransom	13.5	-0.4	13.1	-13.1	3/19/03	13:00	18.53	31.58	32.9	off				32.9 cable length
7/24/03	8:50	GW-20	G Ransom	20.9	-0.4	20.5	-20.5					32.4					
10/27/03	11:18	GW-20	G Ransom	15.8	-0.4	15.4	-15.4	10/27/03	11:00	15.54	30.92		off				new cable length, sitting on something in
11/19/03	14:00	GW-20	G Ransom	16.7	-0.4	16.3	-16.3	11/19/03	14:00	14.70	30.96		off				
4/1/04	17:12	GW-20	G Ransom	14.0	-0.4	13.6	-13.6	4/1/04	4:55	16.75	30.35		off				
6/2/04	14:14	GW-20	G Ransom	13.4	-0.4	13.0	-13.0	6/2/04	1:55	17.15	30.17		off				Mick Oliver, 509-520-5318
12/15/04	14:00	GW-20	G Ransom	14.7	-0.4	14.3	-14.3	12/15/04	4:55	13.84	28.11			135	13.2		Logger fell into well. Cable length different
4/20/05	12:05	GW-20	G Ransom	14.6	-0.4	14.2	-14.2	4/20/05	4:55	11.05	25.23			113.9	12.1		Retrieved and redeployed, new cable length
5/6/05	13:06	GW-20	G Ransom	15.0	-0.4	14.6	-14.6										
7/27/05	14:30	GW-20	G Ransom	19.4	-0.4	19.0	-19.0						on	109.8	12.4		
9/7/2005	10:45	GW -20	G Ransom	15.7	-0.4	15.3	-15.3							136.1	14.7		

Cable Length 1	**31.0**
Cable Length 3	**28.1**
Cable Length 4	**25.2**



Oregon State Observation Well# 850



Oregon State Observation Well# 850

Kuo Testing Labs, Inc.

337 South 1st Avenue, Othello, WA 99344
(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED 12/8/2004

DATE RECEIVED

SEND REPORT TO 12/9/2004

DATE REPORTED 12/21/2004

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

LAB #	CLIENT'S SAMPLE NO.	ANALYSIS	RESULTS	MDL	UNITS	ANALYST
74118	OBS Well #1	COD	<8	8	mg/L	Wang
74118	OBS Well #1	TKN as Nitrogen	<0.72	0.72	mg/L	Wang
74118	OBS Well #1	Nitrate as Nitrogen	0.1	0.044	mg/L	Wang
74118	OBS Well #1	Chloride	ND	0.297	mg/L	Wang
74118	OBS Well #1	Soluble Reactive Phosphoru	0.06		mg/L	Wang
74118	OBS Well #1	Total Dissolved Solids	34	20.3	mg/L	Wang
74118	OBS Well #1	Fecal E-Coli	12	1	MPN/100mL	Valley Enviornment

<(0.001) indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L: Indicates milligrams per litre
* PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
Please check out our new Web Site at http://www.kuotesting.com

Dr. Eugene Kuo, Quality Assurance Coordinator

Dec. 22, 2004
Date

Kuo Testing Labs, Inc.

337 South 1st Avenue, Othello, WA 99344
(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

SYSTEM ASSIGNED	DATE COLLECTED	DATE RECEIVED	DATE REPORTED
	12/8/2004	12/9/2004	12/23/2004

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYZED
74117	Intake	COD	12	8	mg/L	Wang
74117	Intake	TKN as Nitrogen	<0.72	0.72	mg/L	Wang
74117	Intake	Nitrate as Nitrogen	0.1	0.044	mg/L	Wang
74117	Intake	Chloride	1.00	0.297	mg/L	Wang
74117	Intake	Soluble Reactive Phosphoru	0.02		mg/L	Wang
74117	Intake	Total Disolved Solids	24	20.3	mg/L	Wang
74117	Intake	Fecal E-Coli	62	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L: Indicates milligrams per litre
* PQL–Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
Please check out our new Web Site at http://www.kuotesting.com

Molly Lee for Eugene
Dr. Eugene Kuo, Quality Assurance Coordinator

Dec. 28, 2004
Date

Kuo Testing Labs, Inc.

337 South 1st Avenue, Othello, WA 99344
(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED: 12/8/2004
DATE RECEIVED: 12/9/2004
DATE REPORTED: 12/23/2004

SYSTEM (CLIENT):
W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO:
Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CLIENT SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYST
74117	Intake	COD	12	8	mg/L	Wang
74117	Intake	TKN as Nitrogen	<0.72	0.72	mg/L	Wang
74117	Intake	Nitrate as Nitrogen	0.1	0.044	mg/L	Wang
74117	Intake	Chloride	1.00	0.297	mg/L	Wang
74117	Intake	Soluble Reactive Phosphoru	0.02		mg/L	Wang
74117	Intake	Total Disolved Solids	24	20.3	mg/L	Wang
74117	Intake	Fecal E-Coli	62	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
* POL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
Please check out our new Web Site at http://www.kuotesting.com

Methyl sic for Eugene
Dr. Eugene Kuo, Quality Assurance Coordinator

Dec. 28, 2004
Date

Kuo Testing Labs, Inc.

337 South 1st Avenue, Othello, WA 99344
(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED: 12/8/2004
DATE RECEIVED:
SEND REPORT TO: 12/9/2004
DATE REPORTED: 12/21/2004

SYSTEM / CUSTOMER:

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862

Project Name:

Bob Bower
PO Box 68
Milton Freewater OR 97862

Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYST
74118	OBS Well #1	COD	<8	8	mg/L	Wang
74118	OBS Well #1	TKN as Nitrogen	<0.72	0.72	mg/L	Wang
74118	OBS Well #1	Nitrate as Nitrogen	0.1	0.044	mg/L	Wang
74118	OBS Well #1	Chloride	ND	0.297	mg/L	Wang
74118	OBS Well #1	Soluble Reactive Phosphoru	0.06		mg/L	Wang
74118	OBS Well #1	Total Dissolved Solids	34	20.3	mg/L	Wang
74118	OBS Well #1	Fecal E-Coli	12	1	MPN/100mL	Valley Enviornment

<(0.001): Indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L: Indicates milligrams per litre
* PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
Please check out our new Web Site at http://www.kuotesting.com

Mollyann for Eugene
Dr. Eugene Kuo, Quality Assurance Coordinator

Dec. 22, 2004
Date

Kuo Testing Labs, Inc.

337 South 1st Avenue, Othello, WA 99344
(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED: 5/19/2005
DATE RECEIVED: 5/20/2005
DATE REPORTED: 6/2/2005

SYSTEM / CUSTOMER

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO:
Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
76493	OBS #1	Total Dissolved Solids	48	20.3	mg/L	Wang
76493	OBS #1	Nitrate as Nitrogen	0.11	0.044	mg/L	Wang
76493	OBS #1	TKN as Nitrogen	<0.72	0.72	mg/L	Wang
76493	OBS #1	COD	<8	8	mg/L	Wang
76493	OBS #1	Chloride	ND	0.297	mg/L	Wang
76493	OBS #1	SRP-(Othro-P)	0.155	0.03	mg/L	Wang

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
None Detected
L:Indicates milligrams per litre
• PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
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Dr. Eugene Kuo, Quality Assurance Coordinator

06-09-05
Date

Kuo Testing Labs, Inc.

337 South 1st Avenue, Othello, WA 99344
(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED	DATE RECEIVED	DATE REPORTED
12/1/2004	12/6/2004	12/6/2004

SEND REPORT TO

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO.	CUSTOMER SAMPLE NO.	ANALYSIS	RESULTS	MDL	UNITS	COMMENTS
74008	Reesa Well	Fecal E-Coli	3	1	MPN/100mL	Valley Enviornmeat

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND None Detected
mg/L:Indicates milligrams per litre
* PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
Please check out our new Web Site at http://www.kuotesting.com

Dr. Eugene Kuo, Quality Assurance Coordinator

12-07-04
Date

Kuo Testing Labs, Inc.

337 South 1st Avenue, Othello, WA 99344
(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED: 12/1/2004
DATE RECEIVED: 12/6/2004
DATE REPORTED: 12/6/2004

SYSTEM / CUSTOMER

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO:
Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
74008	Reesa Well	Fecal E-Coli	3	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
QL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
DL: Method Detection Limit
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Dr. Eugene Kuo, Quality Assurance Coordinator

12-07-04
Date

Kuo Testing Labs, Inc.

337 South 1st Avenue, Othello, WA 99344
(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED: 12/1/2004
DATE RECEIVED: 12/6/2004
DATE REPORTED: 12/6/2004

SYSTEM / CUSTOMER:
W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO:
Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYST
74025	McKnight	Fecal E-Coli	<1	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
Please check out our new Web Site at http://www.kuotesting.com

Dr. Eugene Kuo, Quality Assurance Coordinator

12-07-04
Date

Kuo Testing Labs, Inc.

337 South 1st Avenue, Othello, WA 99344
(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED: 12/1/2004
DATE RECEIVED: 12/6/2004
DATE REPORTED: 12/6/2004

SYSTEM / CUSTOMER

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862

SEND REPORT TO:
Bob Bower
PO Box 68
Milton Freewater OR 97862

Project Name:

Attn:

SAMPLE NO.	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MCL	UNITS	ANALYST
74009	Brown	Fecal E-Coli	<1	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
)L=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
.L: Method Detection Limit
Please check out our new Web Site at http://www.kuotesting.com

Dr. Eugene Kuo, Quality Assurance Coordinator

12-07-04
Date

Kuo Testing Labs, Inc.

337 South 1st Avenue, Othello, WA 99344
(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED: 12/1/2004
DATE RECEIVED: 12/6/2004
DATE REPORTED: 12/6/2004

SYSTEM / CUSTOMER

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862

SEND REPORT TO

Bob Bower
PO Box 68
Milton Freewater OR 97862

Project Name:

Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
74010	Winesap	Fecal E-Coli	<1	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
QL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
Please check out our new Web Site at http://www.kuotesting.com

Dr. Eugene Kuo, Quality Assurance Coordinator

12-07-04
Date

Kuo Testing Labs, Inc.

337 South 1st Avenue, Othello, WA 99344
(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

SYSTEM / CUSTOMER	DATE COLLECTED	DATE RECEIVED	DATE REPORTED
	12/1/2004		
SEND REPORT TO		12/6/2004	12/6/2004

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSIS
74011	Frog	Fecal E-Coli	<1	1	MPN/100mL	Valley Enviornment

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
)L=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
L: Method Detection Limit

Please check out our new Web Site at http://www.kuotesting.com

Dr. Eugene Kuo, Quality Assurance Coordinator

12-07-04
Date

Kuo Testing Labs, Inc.

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Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED 1/5/2005 DATE RECEIVED 1/6/2005 DATE REPORTED 11/28/2005

SYSTEM / CUSTOMER

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO

Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO.	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
74644	GW 62	Fecal E-Coli	11	1	MPN/100ml	Cascade Analytical

<0.0001: indicates the analyte was not detected at or above the concentration indicated
ND: None Detected
mg/L: Indicates milligrams per liter
* PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
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Dr. Eugene Kuo, Quality Assurance Coordinator

Date

Kuo Testing Labs, Inc.

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(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED: 1/5/2005
DATE RECEIVED: 1/6/2005
DATE REPORTED: 11/28/2005

SYSTEM / CUSTOMER

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO

Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
74643	OBS Well 1	Fecal E-Coli	2	1	MPN/100ml	Cascade Analytical

<(0.001) indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L Indicates milligrams per litre
* PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
Please check out our new Web Site at http://www.kuotesting.com

Dr. Eugene Kuo, Quality Assurance Coordinator

Date

Kuo Testing Labs, Inc.

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(509) 488-0112 Phone (509) 488-0118 Fax (800) 328-0112 Toll Free
Web Site: http://www.kuotesting.com e-mail: kuotest@atnet.net

DATE COLLECTED: 5/19/2005
DATE RECEIVED: 5/25/2005
DATE REPORTED: 5/25/2005

SYSTEM / CUSTOMER

W.W.B.W.C.
PO Box 68
Milton Freewater OR 97862
Project Name:

SEND REPORT TO:
Bob Bower
PO Box 68
Milton Freewater OR 97862
Attn:

SAMPLE NO	CUSTOMER SAMPLE NO	ANALYSIS	RESULTS	MDL	UNITS	ANALYSTS
76546	OBS #1	Fecal E-Coli	5	1	MPN/100 ml	Valley Enviornental

<(0.001): indicates the analyte was not detected at or above the concentration indicated.
ND: None Detected
mg/L:Indicates milligrams per litre
* PQL=Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions
MDL: Method Detection Limit
Please check out our new Web Site at http://www.kuotesting.com

Dr. Eugene Kuo, Quality Assurance Coordinator

05-25-05
Date

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HERBICIDES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 05-05830

Project: 76494

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS #1
County:

Field ID: W W B W C
Lab Number: 04613162
Date Collected: 5/19/2005
Date Extracted: 515_050601
Date Analyzed: 6/3/2005
Report Date: 6/6/2005
Analyst: CMH
Supervisor:

EPA Method 515.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
37	2,4 - D	**ND**	ug/L	0.2	0.2	70	
38	2,4,5 - TP (SILVEX)	**ND**	ug/L	0.4	0.4	50	
134	PENTACHLOROPHENOL	**ND**	ug/L	0.08	0.08	1	
137	DALAPON	**ND**	ug/L	2	2	200	
139	DINOSEB	**ND**	ug/L	0.4	0.4	7	
140	PICLORAM	**ND**	ug/L	0.2	0.2	500	
	EPA Unregulated						
138	DICAMBA	**ND**	ug/L	0.2	0.2		
	State Unregulated						
135	2,4 DB	**ND**	ug/L	1.0	1.0		
136	2,4,5 T	**ND**	ug/L	0.4	0.4		
220	BENTAZON	**ND**	ug/L	0.5	0.5		
221	DICHLORPROP	**ND**	ug/L	0.5	0.5		
223	ACTIFLORFIN	**ND**	ug/L	2.0	2.0		
225	DACTHAL (DCPA)	**ND**	ug/L	0.1	0.1		
226	3,5 - DICHLOROBENZOIC ACID	**ND**	ug/L	0.5	0.5		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

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SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 05-05830

Project: 76494

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS #1
County:
Sampled By:
Sampler Phone:

Field ID: W W B W C
Lab Number: 04613162
Date Collected: 5/19/2005
Date Extracted: 525_050601
Date Analyzed: 6/7/2005
Report Date: 6/17/2005
Analyst: MW
Supervisor:

EPA Method 525.2 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
33	ENDRIN	ND	ug/L	0.02	0.02	2	
34	LINDANE (BHC - GAMMA)	ND	ug/L	0.04	0.04	0.2	
35	METHOXYCHLOR	ND	ug/L	0.2	0.2	40	
117	ALACHLOR	ND	ug/L	0.4	0.4	2	
119	ATRAZINE	ND	ug/L	0.2	0.2	3	
120	BENZO(A)PYRENE	ND	ug/L	0.04	0.04	0.2	
122	CHLORDANE, TECHNICAL	ND	ug/L	0.4	0.4	2	
124	DI(ETHYLHEXYL)-ADIPATE	ND	ug/L	1.3	1.3	400	
125	DI(ETHYLHEXYL)-PHTHALATE	ND	ug/L	1.3	1.3	6	
126	HEPTACHLOR	ND	ug/L	0.08	0.08	0.4	
127	HEPTACHLOR EPOXIDE (A&B)	ND	ug/L	0.04	0.04	0.2	
128	HEXACHLOROBENZENE	ND	ug/L	0.2	0.2	1	
129	HEXACHLOROCYCLO-PENTADIENE	ND	ug/L	0.2	0.2	50	
133	SIMAZINE	ND	ug/L	0.15	0.15	4	
	EPA Unregulated						
118	ALDRIN	ND	ug/L	0.2	0.2		
121	BUTACHLOR	ND	ug/L	0.4	0.4		
123	DIELDRIN	ND	ug/L	0.2	0.2		
130	METOLACHLOR	ND	ug/L	1.0	1.0		
131	METRIBUZIN	ND	ug/L	0.2	0.2		
132	PROPACHLOR	ND	ug/L	0.2	0.2		
	State Unregulated - Other						
179	BROMACIL	ND	ug/L	0.2	0.2		
183	PROMETON	ND	ug/L	0.2	0.2		Qualitative Analysis Only
190	TERBACIL	ND	ug/L	0.2	0.2		
202	DIAZINON	ND	ug/L	0.2	0.2		Unstable in Acidified Sample Matrix
208	EPTC	ND	ug/L	0.3	0.3		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
232	4,4-DDD	ND	ug/L	0.2	0.2		
233	4,4-DDE	ND	ug/L	0.2	0.2		
234	4,4-DDT	ND	ug/L	0.2	0.2		
236	CYANAZINE	ND	ug/L	0.2	0.2		Qualitative Analysis Only
239	MALATHION	ND	ug/L	0.2	0.2		
240	PARATHION	ND	ug/L	0.2	0.2		
243	TRIFLURALIN	ND	ug/L	0.2	0.2		
	- PAHs						
96	NAPTHALENE	ND	ug/L	0.1	0.1		
154	FLUORENE	ND	ug/L	0.2	0.2		
244	ACENAPHTHYLENE	ND	ug/L	0.2	0.2		
245	ACENAPHTHENE	ND	ug/L	0.2	0.2		
246	ANTHRACENE	ND	ug/L	0.2	0.2		
247	BENZ(A)ANTHRACENE	ND	ug/L	0.1	0.1		
248	BENZO(B)FLUORANTHENE	ND	ug/L	0.2	0.2		
249	BENZO(G,H,I)PERYLENE	ND	ug/L	0.2	0.2		
250	BENZO(K)FLUORANTHENE	ND	ug/L	0.2	0.2		
251	CHRYSENE	ND	ug/L	0.2	0.2		
252	DIBENZO(A,H)ANTHRACENE	ND	ug/L	0.2	0.2		
253	FLUORANTHENE	ND	ug/L	0.2	0.2		
255	!NDENO(1,2,3-CD)PYRENE	ND	ug/L	0.2	0.2		
256	PHENANTHRENE	ND	ug/L	0.2	0.2		
257	PYRENE	ND	ug/L	0.2	0.2		
	- Phthalates						
258	BENZYL BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
259	DI-N-BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
260	DIETHYL PHTHALATE	ND	ug/L	0.6	0.6		
261	DIMETHYL PHTHALATE	ND	ug/L	0.6	0.6		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.

**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.

***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.

****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.

J - Estimated value.

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SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS #1
County:

Reference Number: 05-05830
Project: 76494
Field ID: W W B W C
Lab Number: 04613162
Date Collected: 5/19/2005
Date Extracted: 508_050601
Date Analyzed: 6/2/2005
Report Date: 6/3/2005
Analyst: MW
Supervisor:

EPA Method 508.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	PCBs/Toxaphene						
36	TOXAPHENE	**ND**	ug/L	2	2	3	
173	AROCLOR 1221	**ND**	ug/L	20	20		
174	AROCLOR 1232	**ND**	ug/L	0.5	0.5		
175	AROCLOR 1242	**ND**	ug/L	0.5	0.3		
176	AROCLOR 1248	**ND**	ug/L	0.1	0.1		
177	AROCLOR 1254	**ND**	ug/L	0.1	0.1		
178	AROCLOR 1260	**ND**	ug/L	0.2	0.2		
180	AROCLOR 1016	**ND**	ug/L	0.1	0.1		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

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CARBAMATES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS #1
County:
Sampled By:
Sampler Phone:

Reference Number: 05-05830

Project: 76494

Field ID: W W B W C
Lab Number: 04613162
Date Collected: 5/19/2005
Date Extracted: 531_050609
Date Analyzed: 6/9/2005
Report Date: 6/13/2005
Analyst: TW
Supervisor:

EPA Method 531.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
146	CARBOFURAN	**ND**	ug/L	1.8	1.8	40	
148	OXYMAL	**ND**	ug/L	4.0	4.0	200	
	EPA Unregulated						
141	3-HYDROXYCARBOFURAN	**ND**	ug/L	2.0	2.0		
142	ALDICARB	**ND**	ug/L	1.0	1.0		
143	ALDICARB SULFONE	**ND**	ug/L	1.6	1.6		
144	ALDICARB SULFOXIDE	**ND**	ug/L	1.0	1.0		
145	CARBARYL	**ND**	ug/L	2.0	2.0		
147	METHOMYL	**ND**	ug/L	1.0	4.0		
	State Unregulated - Other						
326	PROPOXUR (BAYGON)	**ND**	ug/L	1.0			
327	METHIOCARB	**ND**	ug/L	4			

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

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HERBICIDES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075
Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS Well #1
County:

Field ID: 74116
Lab Number: 04624846
Date Collected: 12/8/2004
Date Extracted: 515_041217
Date Analyzed: 1/5/2005
Report Date: 1/7/2005
Analyst: CMH
Supervisor: JW

EPA Method 515.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
37	2,4 - D	ND	ug/L	0.2	0.2	70	
38	2,4,5 - TP (SILVEX)	ND	ug/L	0.4	0.4	50	
134	PENTACHLOROPHENOL	ND	ug/L	0.08	0.08	1	
137	OALAPON	ND	ug/L	2	2	200	
139	DINOSEB	ND	ug/L	0.4	0.4	7	
140	PICLORAM	ND	ug/L	0.2	0.2	500	
	EPA Unregulated						
138	DICAMBA	ND	ug/L	0.2	0.2		
	State Unregulated						
135	2,4 DB	ND	ug/L	1	1.0		
136	2,4,5 T	ND	ug/L	0.4	0.4		
220	BENTAZON	ND	ug/L	0.5	0.5		
221	DICHLORPROP	ND	ug/L	0.5	0.5		
223	ACTIFLORFIN	ND	ug/L	2	2.0		
225	DACTHAL (DCPA)	ND	ug/L	0.1	0.1		
226	3,5 - DICHLOROBENZOIC ACID	ND	ug/L	0.5	0.5		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds
A blank MCL or SAL value indicates a level is not currently established.
***- If a compound is detected = or > to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero
J - Estimated value

FORM SOC97

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Burlington, WA 98233
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SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS Well #1
County:

Reference Number: 04-12075
Project: 74115/74116
Field ID: 74116
Lab Number: 04624846
Date Collected: 12/8/2004
Date Extracted: 525_041220
Date Analyzed: 12/22/2004
Report Date: 1/6/2005
Analyst: CMH
Supervisor:

EPA Method 525.2 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
33	ENDRIN	ND	ug/L	0.02	0.02	2	
34	LINDANE (B HC - GAMMA)	ND	ug/L	0.04	0.04	0.2	
35	METHOXYCHLOR	ND	ug/L	0.2	0.2	40	
117	ALACHLOR	ND	ug/L	0.4	0.4	2	
119	ATRAZINE	ND	ug/L	0.2	0.2	3	
120	BENZO(A)PYRENE	ND	ug/L	0.04	0.04	0.2	
122	CHLORDANE, TECHNICAL	ND	ug/L	0.4	0.4	2	
124	DI(ETHYLHEXYL)-ADIPATE	ND	ug/L	1.3	1.3	400	
125	DI(ETHYLHEXYL)-PHTHALATE	ND	ug/L	1.3	1.3	6	
126	HEPTACHLOR	ND	ug/L	0.08	0.08	0.4	
127	HEPTACHLOR EPOXIDE (A&B)	ND	ug/L	0.04	0.04	0.2	
128	HEXACHLOROBENZENE	ND	ug/L	0.2	0.2	1	
129	HEXACHLOROCYCLO-PENTADIENE	ND	ug/L	0.2	0.2	50	
133	SIMAZINE	ND	ug/L	0.15	0.15	4	
	EPA Unregulated						
118	ALDRIN	ND	ug/L	0.2	0.2		
121	BUTACHLOR	ND	ug/L	0.4	0.4		
123	DIELDRIN	ND	ug/L	0.2	0.2		
130	METOLACHLOR	ND	ug/L	1	1.0		
131	METRIBUZIN	ND	ug/L	0.2	0.2		
132	PROPACHLOR	ND	ug/L	0.2	0.2		
	State Unregulated - Other						
179	BROMACIL	ND	ug/L	0.2	0.2		
183	PROMETON	ND	ug/L	0.2	0.2		
190	TERBACIL	ND	ug/L	0.2	0.2		
202	DIAZINON	ND	ug/L	0.2	0.2		
208	EPTC	ND	ug/L	0.3	0.3		
232	4,4-DDD	ND	ug/L	0.2	0.2		
233	4,4-DDE	ND	ug/L	0.2	0.2		

* An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL
** Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA. NPDWR. State Advisory Level (SAL) for Unregulated compounds
A blank MCL or SAL value indicates a level is not currently established.
*** If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH
**** Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 95% confidence that the compound concentration is greater than zero
J - Estimated value

EDGE ANALYTICAL

Reference Number: 04-12075
Lab Number 04624845
Report Date: 1/5/2005

SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
234	4,4-DDT	ND	ug/L	0.2	0.2		
236	CYANAZINE	ND	ug/L	0.2	0.2		
239	MALATHION	ND	ug/L	0.2	0.2		
240	PARATHION	ND	ug/L	0.2	0.2		
243	TRIFLURALIN	ND	ug/L	0.2	0.2		
	- PAHs						
96	NAPTHALENE	ND	ug/L	0.1	0.1		
154	FLUORENE	ND	ug/L	0.2	0.2		
244	ACENAPHTHYLENE	ND	ug/L	0.2	0.2		
245	ACENAPHTHENE	ND	ug/L	0.2	0.2		
248	ANTHRACENE	ND	ug/L	0.2	0.2		
247	BENZ(A)ANTHRACENE	ND	ug/L	0.1	0.1		
248	BENZO(B)FLUORANTHENE	ND	ug/L	0.2	0.2		
249	BENZO(G,H,I)PERYLENE	ND	ug/L	0.2	0.2		
250	BENZO(K)FLUORANTHENE	ND	ug/L	0.2	0.2		
251	CHRYSENE	ND	ug/L	0.2	0.2		
252	DIBENZO(A,H)ANTHRACENE	ND	ug/L	0.2	0.2		
253	FLUORANTHENE	ND	ug/L	0.2	0.2		
255	INDENO(1,2,3-CD)PYRENE	ND	ug/L	0.2	0.2		
256	PHENANTHRENE	ND	ug/L	0.2	0.2		
257	PYRENE	ND	ug/L	0.2	0.2		
	- Phthalates						
258	BENZYL BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
259	DI-N BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
260	DIETHYL PHTHALATE	ND	ug/L	0.6	0.6		
261	DIMETHYL PHTHALATE	ND	ug/L	0.6	0.6		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds
A blank MCL or SAL value indicates a level is not currently established
***- If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
****- Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

FORM: BOC9/

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CARBAMATES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075

Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS Well #1
County:

Field ID: 74116
Lab Number: 04624846
Date Collected: 12/8/2004
Date Extracted: 531_041215
Date Analyzed: 12/15/2004
Report Date: 12/20/2004
Analyst: TW
Supervisor:

EPA Method 531.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
146	CARBOFURAN	ND	ug/L	1.8	1.8	40	
148	OXYMAL	ND	ug/L	4	4.0	200	
	EPA Unregulated						
141	3-HYDROXYCARBOFURAN	ND	ug/L	2	2.0		
142	ALDICARB	ND	ug/L	1	1.0		
143	ALDICARB SULFONE	ND	ug/L	1.6	1.6		
144	ALDICARB SULFOXIDE	ND	ug/L	1	1.0		
145	CARBARYL	ND	ug/L	2	2.0		
147	METHOMYL	ND	ug/L	1	4.0		
	State Unregulated - Other						
326	PROPOXUR (BAYGON)	ND	ug/L	1			
327	METHIOCARB	ND	ug/L	4			

* An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
** - Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
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*** - If a compound is detected > or = to the State Reporting Level, SRL, specified increased monitoring frequencies may occur per DOH.
**** - Method Detection Limit is the lab's minimum concentration a compound can be measured and reported with 99% confidence that the compound concentration is greater than zero.
J - Estimated value.

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SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075
Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: OBS Well #1
County:

Field ID: 74116
Lab Number: 04624846
Date Collected: 12/8/2004
Date Extracted: 508_041220
Date Analyzed: 1/17/2005
Report Date: 1/7/2005
Analyst: CMH
Supervisor:

EPA Method 508.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	PCBs/Toxaphene						
36	TOXAPHENE	ND	ug/L	2	2	3	
173	AROCLOR 1221	ND	ug/L	20	20		
174	AROCLOR 1232	ND	ug/L	0.5	0.5		
175	AROCLOR 1242	ND	ug/L	0.5	0.3		
176	AROCLOR 1248	ND	ug/L	0.1	0.1		
177	AROCLOR 1254	ND	ug/L	0.1	0.1		
178	AROCLOR 1260	ND	ug/L	0.2	0.2		
180	AROCLOR 1016	ND	ug/L	0.1	0.1		

* An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
**- Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
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J - Estimated value.

FORM: 80C97

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CARBAMATES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075

Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: Intake
County:

Field ID: 74115
Lab Number: 04624845
Date Collected: 12/8/2004
Date Extracted: 531_041215
Date Analyzed: 12/15/2004
Report Date: 12/20/2004
Analyst: TW
Supervisor: PM

EPA Method 531.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
146	CARBOFURAN	ND	ug/L	1.8	1.8	40	
148	OXYMAL	ND	ug/L	4	4.0	200	
	EPA Unregulated						
141	3-HYDROXYCARBOFURAN	ND	ug/L	2	2.0		
142	ALDICARB	ND	ug/L	1	1.0		
143	ALDICARB SULFONE	ND	ug/L	1.6	1.6		
144	ALDICARB SULFOXIDE	ND	ug/L	1	1.0		
145	CARBARYL	ND	ug/L	2	2.0		
147	METHOMYL	ND	ug/L	1	4.0		
	State Unregulated - Other						
326	PROPOXUR (BAYGON)	ND	ug/L	1			
327	METHIOCARB	ND	ug/L	4			

* - An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
** - Maximum Contaminant Level, maximum permissible level of a contaminant in water established by EPA, NPDWR. State Advisory Level (SAL) for Unregulated compounds.
A blank MCL or SAL value indicates a level is not currently established.
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J - Estimated value.

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SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075

Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: Intake
County:

Field ID: 74115
Lab Number: 04624845
Date Collected: 12/8/2004
Date Extracted: 525_041220
Date Analyzed: 12/21/2004
Report Date: 1/5/2005
Analyst: CMH
Supervisor:

EPA Method 525.2 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
33	ENDRIN	ND	ug/L	0.02	0.02	2	
34	LINDANE (BHC - GAMMA)	ND	ug/L	0.04	0.04	0.2	
35	METHOXYCHLOR	ND	ug/L	0.2	0.2	40	
117	ALACHLOR	ND	ug/L	0.4	0.4	2	
119	ATRAZINE	ND	ug/L	0.2	0.2	3	
120	BENZO(A)PYRENE	ND	ug/L	0.04	0.04	0.2	
122	CHLORDANE, TECHNICAL	ND	ug/L	0.4	0.4	2	
124	DI(ETHYLHEXYL)-ADIPATE	ND	ug/L	1.3	1.3	400	
125	DI(ETHYLHEXYL)-PHTHALATE	ND	ug/L	1.3	1.3	6	
126	HEPTACHLOR	ND	ug/L	0.08	0.08	0.4	
127	HEPTACHLOR EPOXIDE (A&B)	ND	ug/L	0.04	0.04	0.2	
128	HEXACHLOROBENZENE	ND	ug/L	0.2	0.2	1	
129	HEXACHLOROCYCLO-PENTADIENE	ND	ug/L	0.2	0.2	50	
133	SIMAZINE	ND	ug/L	0.15	0.15	4	
	EPA Unregulated						
118	ALDRIN	ND	ug/L	0.2	0.2		
121	BUTACHLOR	ND	ug/L	0.4	0.4		
123	DIELDRIN	ND	ug/L	0.2	0.2		
130	METOLACHLOR	ND	ug/L	1	1.0		
131	METRIBUZIN	ND	ug/L	0.2	0.2		
132	PROPACHLOR	ND	ug/L	0.2	0.2		
	State Unregulated - Other						
179	BROMACIL	ND	ug/L	0.2	0.2		
183	PROMETON	ND	ug/L	0.2	0.2		
190	TERBACIL	ND	ug/L	0.2	0.2		
202	DIAZINON	ND	ug/L	0.2	0.2		
208	EPTC	ND	ug/L	0.3	0.3		
232	4,4-DDD	ND	ug/L	0.2	0.2		
233	4,4-DDE	ND	ug/L	0.2	0.2		

*- An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
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J - Estimated value.

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HERBICIDES IN DRINKING WATER

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

Reference Number: 04-12075

Project: 74115/74116

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: Intake
County:

Field ID: 74115
Lab Number: 04624845
Date Collected: 12/8/2004
Date Extracted: 515_041217
Date Analyzed: 1/5/2005
Report Date: 1/7/2005
Analyst: CMH
Supervisor:

EPA Method 515.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	EPA Regulated						
37	2,4 - D	ND	ug/L	0.2	0.2	70	
38	2,4,5 - TP (SILVEX)	ND	ug/L	0.4	0.4	50	
134	PENTACHLOROPHENOL	ND	ug/L	0.08	0.08	1	
137	DALAPON	ND	ug/L	2	2	200	
139	DINOSEB	ND	ug/L	0.4	0.4	7	
140	PICLORAM	ND	ug/L	0.2	0.2	500	SEE COVER NOTE
	EPA Unregulated						
136	DICAMBA	ND	ug/L	0.2	0.2		
	State Unregulated						
135	2,4 DB	ND	ug/L	1	1.0		
136	2,4,5 T	ND	ug/L	0.4	0.4		
220	BENTAZON	ND	ug/L	0.5	0.5		
221	DICHLORPROP	ND	ug/L	0.5	0.5		
223	ACTIFLORFIN	ND	ug/L	2	2.0		
225	DACTHAL (DCPA)	ND	ug/L	0.1	0.1		
226	3,5 - DICHLOROBENZOIC ACID	ND	ug/L	0.5	0.5		

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J - Estimated value

Allen Frouch

Allen F@EdgeAnalytical.com

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SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

Client Name: KUO Testing Labs Inc
337 S 1st
Othello, WA 99344

System Name:
System ID Number:
DOH Source Number:
Multiple Sources:
Sample Type:
Sample Purpose: Investigative or Other
Sample Location: Intake
County:

Reference Number: 04-12075

Project: 74115/74116

Field ID: 74115
Lab Number: 04624845
Date Collected: 12/8/2004
Date Extracted: 508_041220
Date Analyzed: 12/22/2004
Report Date: 1/5/2005
Analyst: CMH
Supervisor: JW

EPA Method 508.1 For State Drinking Water Compliance

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
	PCBs/Toxaphene						
36	TOXAPHENE	ND	ug/L	2	2	3	
173	AROCLOR 1221	ND	ug/L	20	20		
174	AROCLOR 1232	ND	ug/L	0.5	0.5		
175	AROCLOR 1242	ND	ug/L	0.5	0.3		
176	AROCLOR 1248	ND	ug/L	0.1	0.1		
177	AROCLOR 1254	ND	ug/L	0.1	0.1		
178	AROCLOR 1260	ND	ug/L	0.2	0.2		
180	AROCLOR 1016	ND	ug/L	0.1	0.1		

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J - Estimated value

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Reference Number: 04-12075
Lab Number: 04624846
Report Date: 1/6/2005

SYNTHETIC ORGANIC COMPOUNDS (SOC) REPORT

DOH#	COMPOUNDS	RESULTS	Units	SRL	Trigger	MCL	COMMENT
234	4,4-DDT	ND	ug/L	0.2	0.2		
236	CYANAZINE	ND	ug/L	0.2	0.2		
239	MALATHION	ND	ug/L	0.2	0.2		
240	PARATHION	ND	ug/L	0.2	0.2		
243	TRIFLURALIN	ND	ug/L	0.2	0.2		
	- PAHs						
96	NAPTHALENE	ND	ug/L	0.1	0.1		
154	FLUORENE	ND	ug/L	0.2	0.2		
244	ACENAPHTHYLENE	ND	ug/L	0.2	0.2		
245	ACENAPHTHENE	ND	ug/L	0.2	0.2		
246	ANTHRACENE	ND	ug/L	0.2	0.2		
247	BENZ(A)ANTHRACENE	ND	ug/L	0.1	0.1		
248	BENZO(B)FLUORANTHENE	ND	ug/L	0.2	0.2		
249	BENZO(G,H,I)PERYLENE	ND	ug/L	0.2	0.2		
250	BENZO(K)FLUORANTHENE	ND	ug/L	0.2	0.2		
251	CHRYSENE	ND	ug/L	0.2	0.2		
252	DIBENZO(A,H)ANTHRACENE	ND	ug/L	0.2	0.2		
253	FLUORANTHENE	ND	ug/L	0.2	0.2		
255	INDENO(1,2,3-CD)PYRENE	ND	ug/L	0.2	0.2		
256	PHENANTHRENE	ND	ug/L	0.2	0.2		
257	PYRENE	ND	ug/L	0.2	0.2		
	- Phthalates						
258	BENZYL BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
259	DI-N BUTYL PHTHALATE	ND	ug/L	0.6	0.6		
260	DIETHYL PHTHALATE	ND	ug/L	0.6	0.6		
261	DIMETHYL PHTHALATE	ND	ug/L	0.6	0.6		

*: An amount of "ND" indicates that the compound was not detected above the Lab's Method Detection Limit - MDL.
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