

Critical Questions / Tasks for the Day

1. Describe the geologic materials that underlie the Monmouth-Independence Area
2. Total Well Depth for City Wells?
3. Depth to Bedrock under Mon-Ind area?
4. Area of Sludge Ponds?
5. No. of City Wells?
6. Pumping Rate of City Wells?
7. Depth to Water in City Wells?
8. Description of Aquifer (confined, unconfined, artesian, etc.)?
9. Total Water Useage Per Day for Mon-Ind area?
10. Total Sewage Output Per Day?
11. Hydraulic Conductivity of Aquifer Near Well Field?
12. Draw a Groundwater Contour Map of the Independence Aquifer System / with Groundwater Flow Lines (see attached map)
13. What is the direction of Groundwater flow and how does it relate to Willamette River?
14. What is the average discharge of Willamette River near Ind. Well Field?
15. Where is the 100-yr floodplain designation for the Willamette River in Independence? How does this relate to the Sewage sludge ponds?
16. What is the elevation of the Will. River near Independence? What is the elevation of the sludge ponds? Of the well heads?
17. Summarize the hydrogeologic and surface water hydrology for the Independence water supply / sewage ponds.

Field Trip Summary Notes

Monmouth-Independence Field Trip (Independence City Works)

Compiled by Ricci Keller, Spring 2010

- 8 groundwater wells
- 8 inch casings
- 6 inch suction
- Average depth: 50-60 feet
- Pump 125-200gal/min on average
- Shallow Aquifers
- Treat for iron/manganese
- 9 Bacteria Samples required monthly, usually take 12
- Test for Arsenic, Nitrates in Monmouth, Lead, Copper, Calcium Carbonate
- Flouride/Chorine added
 - Fluoride for children's teeth
- 62-70 psi, 58-60 at night (for Polk)
- 80-100 psi for Monmouth
- Water storage in a tank suspended in air uses a gravity feed for water
 - On a hill
 - Uses booster pumps to control pressure
- 4 Production wells North, Polk
 - Well #1 Pumps 600 gal/min
 - Well #2 and #3 pump 250 gal/min
 - Well #4 pumps 50-60 gal/min, emergency well
 - Wells generally 600 yards from river
- 5 Productions wells South
 - About 150 yards from river
 - Only 3 in use
 - Trichloroethylene contamination found in the other 2
 - Also have been re-drilled because they collapsed 45 years ago due to being inactive
- Treatment Plant for Polk Street
 - 1.5 million gallon reservoir
 - 800,000 gal per day
 - 2.2 million gal per day in August
- MPA testing, 3-4 wells
 - Tests the ground water
 - Hot surface water
 - Comes From Ground
- Lagoon System
 - 4 cell lagoon
 - 56 acres
 - 1st contact chamber effluent to river ?/???
- Problems
 - Copper electrolysis, underground pipes
 - Hard to fix
 - Distribution during demanding times, ie: August