McPherson Irrigation Test Well 15 - 21 - 1W

~~MONITORING WELL~~

TEST WELL (KGS did not receive WWC5)

Driller & Assistant: Alex + Shawn Date: 6-14-13

CUSTOMER: Brian Yost, 379 28th Ave., Moundridge, KS 67107

LOCATION:

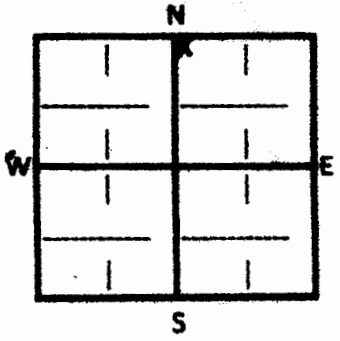
| | | | |
|---|---|---|---|
| ☐ 5" Screen | ☐ Quarters | ☐ Drilling mud | ☐ Water Sample bottle |
| ☐ 5" Casing | ☐ Solvent & Glue | ☐ Chlorine | ☐ Gas & Oil - W.T. |
| ☐ Couplings, 5" | ☐ Water | ☐ Lime | ☐ Inspection Sheet |
| ☐ End Caps, 5" | ☐ 8" & 9" Bits | ☐ 10" Liner, If needed | |
| ☐ Gravel Pack | ☐ Packing | ☐ Holeplug | |

| Depth: | Formation: | Well Information: |
|---|---|---|
| 0-1 | Top Soil | Static Water Level: 7ft |
| 1-14 | Brown clay | Est. production: 20-30 |
| 14-25 | Green/tan clay w/fine sand | Casing depth: 51-31 2in |
| 25-49 | Fine sand | Screen depth: 31-0 2in |
| 49-55 | green/grey shale | Grouting depth: 20-0 |
| | | Number of bags: 3 |
| | | Nearest Contamination: hog farm |
| | | 50ft east (future) |
| | | |
| | | Maintenance & Safety: |
| | | |
| | | |
| | | Notes: |
| | | |

Directions:

| | | | |
|---|---|---|---|
| Latitude: | 38.231543 | N decimal degrees | (ex. 38.881796) |
| Longitude | -97.417220 | W decimal degrees | (ex. 95.373889) |
| Datum: | ☐ NAD27 ☒ NAD83 ☐ WGS84 | | |

| | | | |
|---|---|---|---|
| NW 1/4 | NW 1/4 | NE 1/4 | |
| Sec. 15 | T 21 | R 1 | E (W) |
| County | McPherson | | |




| | |
|---|---|
| $ 7.00 x 55' | /ft. Well |
| $ 50.00 | /Grout |
| $ None | /Test Pumping |
| $ None | /Water Sample |
| Contract Received: | |

Invoice #: 17942

Date Mailed: 6/26

Data ✓

West Test Well 3

SDK Laboratories

1000 Corey Road
P.O. Box 886
Hutchinson, KS 67504-0886
620-665-5661
FAX: 620-665-0559
TOLL FREE: 877-464-0623
www.sdklabs.com



Sample # 2848.14
Sample: Water
Other ID: 3

W Test Well 3

Yost, Brian
379 28th Avenue
Moundridge, Ks 67107

Date Received: 6/16/2014 12:10:00
Date/Time Sampled: 6/16/2014 9:20:00
Date Reported: 06/18/2014
Total Fee: $ 74.00

## ANALYSIS

| | Result | Units | Date/Time Analyzed | Analyst |
|---|---|---|---|---|
| ++Chloride - SM 4500-Cl B | 4.99 | mg/L | 6/17/2014 09:00 | KO |
| ++Ammonia-Nitrogen - SM 4500-NH3 B | 0.28 | mg/L | 6/18/2014 08:25 | MH |
| ++Total Kjeldahl Nitrogen - SM 4500-N B | 0.56 | mg/L | 6/17/2014 06:50 | MH |
| ++Nitrate-Nitrogen - SM 4500-NO3 D | Less than 1.0 | mg/L | 6/16/2014 13:45 | KO |

*** Denotes analysis was subcontracted to another laboratory for state compliance - see attached.**
**Methods of analysis per EPA-600 or EPA SW-846, 3rd Ed., 1986 or Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992.**
**++Denotes NELAP/KDHE Accredited Method. Lab Certificate #E-10152. Results meet all requirementsof NELAC unless noted.**

Approved By: M. A. Hogan, Quality Assurance Officer

Matt Hogan

Copies

SDK Laboratories

1000 Corey Road
P.O. Box 886
Hutchinson, KS 67504-0886
620-665-5661
FAX: 620-665-0559
TOLL FREE: 877-464-0623
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Sample # 3813.13
Sample: Wastewater
Other ID: #3

Date Received: 9/12/2013 14:25:00
Date/Time Sampled: 9/12/2013 11:40:00
Date Reported: 09/18/2013
Total Fee: $ 74.00

Yost, Brian
379 28th Avenue
Moundridge, Ks 67107

W Test Well 3

## ANALYSIS

| | Result | Units | Date/Time Analyzed | Analyst |
|---|---|---|---|---|
| ++Chloride - SM 4500-Cl B | 5.00 | mg/L | 9/13/2013 14:00 | SE |
| ++Ammonia-Nitrogen - SM 4500-NH3 B | Less than 0.5 | mg/L | 9/17/2013 10:00 | MH |
| ++Total Kjeldahl Nitrogen - SM 4500-N B | Less than 0.5 | mg/L | 9/13/2013 09:10 | MH |
| ++Nitrate-Nitrogen - SM 4500-NO3 D | Less than 1.0 | mg/L | 9/13/2013 15:15 | SE |

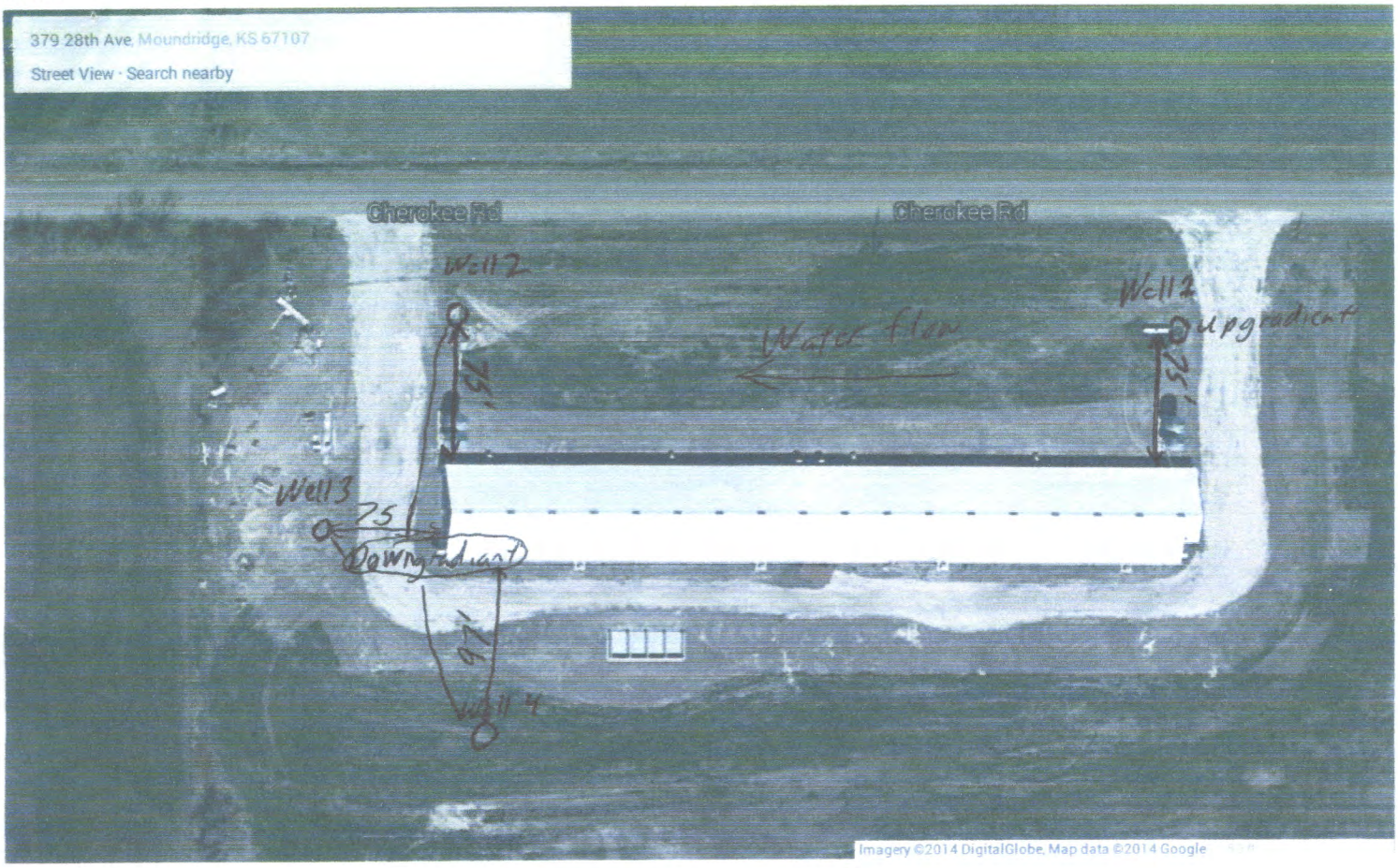
**Sample receipt temperature= 18.9 degrees C

* Denotes analysis was subcontracted to another laboratory for state compliance - see attached.
Methods of analysis per EPA-600 or EPA SW-846, 3rd Ed., 1986 or Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992.
++Denotes NELAP/KDHE Accredited Method. Lab Certificate #E-10152. Results meet all requirementsof NELAC unless noted.

Approved By: M. H. Hogan, Quality Assurance Officer
Matt Hogan

NELAP ACCREDITED LABORATORY

The results reported pertain only to the samples as received by the laboratory


379 28th Ave, Moundridge, KS 67107
Street View · Search nearby
Cherokee Rd
Cherokee Rd
Well 2
Water flow
Well 2
upgradient
Well 3
75'
Downgradient
Well 4
Imagery ©2014 DigitalGlobe, Map data ©2014 Google

# Brian Yost historic static water levels and total depth measurments.

| | Water Well 1 | | Water Well2 | | Test Well 3 | | Test Well 4 | |
|---|---|---|---|---|---|---|---|---|
| Date | Water level | Total Depth | Water level | Total Depth | Water level | Total Depth | Water level | Total Depth |
| 8-18-14 | 10' 8" | 51' 6" | 10' 10" | 39' 5" | 8' 5" | 50' | 6' 5" | 51' 10" |
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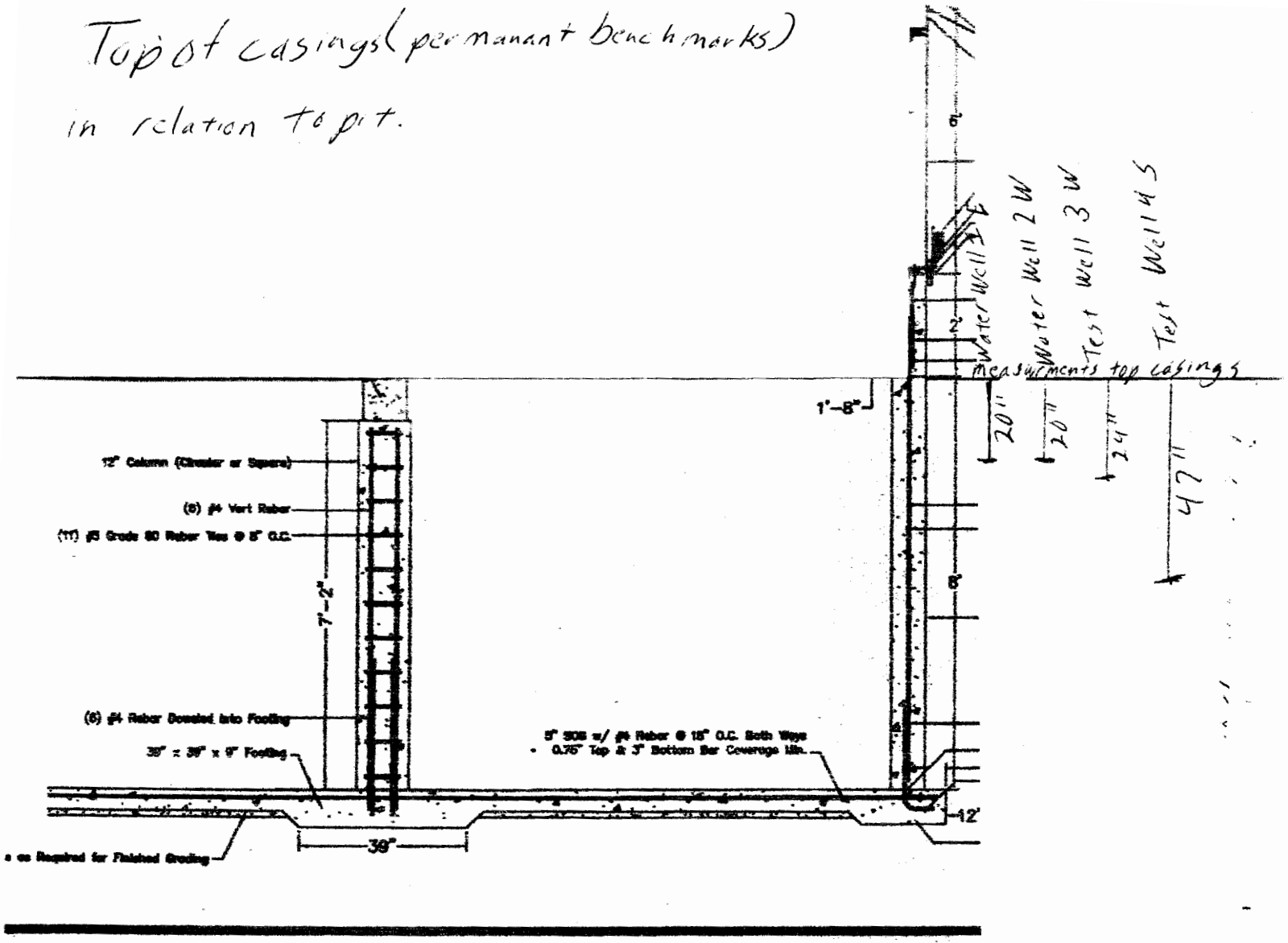
Field notes and deviations from GMP ;

Top of casings (permanant benchmarks) in relation to pit.



# Brian Yost ground well monitoring plan

My monitoring wells are already completed. Included is a well log from the well drillers showing how they did them. Two of the wells are monitoring wells, the other two are water supply wells that supply water to my barns. I have one upgradient well and three downgradient wells. Also included is a map showing the locations of the wells.

I am including Peterson Irrigation's well log to show how the wells were constructed. I poured a two foot pad around each test well, then anchored a large steel pipe on the it with a lid and a padlock. I will have steel pipes cemented in the ground to protect my water wells.

I plan to check the wells sometime in May. I will first inspect the well pad, the casing, well cap protective casing, elevation mark and locks, noting anything that needs attention. Then I plan to check static water level with a weighted tape measure, drop it until I hear it hit the water, since it is only about 7 feet . Then I will let it drop to the bottom of well, to measure the depth of my well. I will measure to the top of casing since that is my permanent benchmark. Included is a survey showing the height of my wells in relation to my hog barn.

To purge the well I plan to use my air compressor. I will do this by putting a hose down wells three and four and run it until the required amount of water is run out of my well. I figured the volume of my casing, run my air compressor at 25 psi, and then collected the water. I had 19 gallons per minute. For well three I need 30 gallons, so I will run it for 2 minutes. For well four I need 36.5 gallons so I will run it for 2 minutes. The water wells are running constantly so they will not need purging.

To collect the water samples I will drop a clean cup down wells three and four, decontaminating it with non-phosphate soap and rinsing it with distilled water between wells, and dumping it into clean containers provided by SDK laboratories. For the water wells one and two I will go in the barn and collect it in clean containers from a faucet.

I will also include;

- Base map with monitoring wells;
- Table compiling historic static water levels and elevations;
- Table compiling historic analytical results with excessive concentrations including total nitrogen;
- A copy of field notes and/or field data sheet;
- A copy of analytical laboratory reports for the sample results;
- Chain of custody records;
- A description of any deviations from the GMP that occurred during the sampling event and reasons for the deviation.

Note: The well drillers said they hit water at 7.5 feet, I don't believe that's right. We did extensive excavating before the project, we hit water at 10.5 feet, static water level is at 7 feet. There is a three foot layer of clay right above water line. We dug a hole 9 feet deep, left it sit for about a week, and had no water coming into the hole. It seems the static water level has come up some, it was very dry when we checked it originally, been wetter since.