

FARMINGTON CITY COUNCIL MEETING

Tuesday, August 6, 2013

WORK SESSION

Present: Mayor Scott Harbertson, Council Members John Bilton, Cindy Roybal, Jim Talbot and Jim Young, City Manager Dave Millheim, City Development Director David Petersen, Associate City Planner Christy Alexander, City Recorder Holly Gadd and Recording Secretary Cynthia DeCoursey

Schematic Plan for the Kestrel Bay Estates PUD Subdivision (300 S 1400 W)

Mayor Harbertson reported that the Planning Commission recommended several changes regarding this Subdivision which would be discussed during the regular session, and Dave Millheim said there are outstanding flood plain issues which must be resolved prior to preliminary plat approval.

Status of Main Street Well

There was a discussion of issues related to the Well, and Dave Millheim informed the Council that the City plans to hire Advanced Environmental Engineering to conduct a study of the Well and provide and review the data to help determine a solution. Additional information will be provided during the regular session.

REGULAR SESSION

Present: Mayor Scott Harbertson, Council Members John Bilton, Cindy Roybal, Jim Talbot and Jim Young, City Manager Dave Millheim, City Development Director David Petersen, Associate City Planner Christy Alexander, City Engineer Paul Hirst, Youth City Council Member Jill Hess, City Recorder Holly Gadd and Recording Secretary Cynthia DeCoursey

CALL TO ORDER:

Roll Call (Opening Comments/Invocation/Pledge of Allegiance)

The invocation was offered by Jim Young and the Pledge of Allegiance was led by local Boy Scout Jay Lyman.

REPORTS OF COMMITTEES/MUNICIPAL OFFICERS:

Executive Summary for Planning Commission meetings held June 27 and July 11, 2013

The Summaries were included in the staff report.

PUBLIC HEARINGS:

Schematic Plan for the Kestrel Bay Estates PUD Subdivision (300 S 1400 W)

Christy Alexander said this request is for a 50-lot PUD Subdivision with single family homes on 8.68 acres of property. The Planning Commission held three public hearings and recommended the following as a compromise for residents in the area:

- Include 3 connecting roads out of the subdivision—450 S, 620 S, and Frontage Road;
- Move the Frontage Road to the south so that it is more of an S curve;
- Install a stop sign at the Frontage Road entrance;
- Include a 3-way stop on the corner of 450 S 75 W;
- Install a radar/speed sign on 450 S; and
- Install a sidewalk on the 620 South connection

David Petersen gave a brief history of the City’s Master Transportation Plan (MTP) and said 450 S has been shown as a through street on the MTP since 1988. The 1998 MTP shows five connecting streets: 200 S, 450 S, 620 S, a road through Rice Farms, and Glovers Lane, and the 2009 MTP shows 450 S as a through street.

Developer **Scott Balling**, 323 E Pages Lane, Centerville, visited many of the residents within 500 feet of this project. Most of them did not want multi-family units, so he designed single-family homes that would be compatible with other homes in the area. Kestrel Bay Estates will be marketed toward “empty nesters”, an HOA will manage all of the landscaping, the main floor will be 1600 square feet, and the homes will have full basements and 2-3 car garages. He feels that both of the plans for access roads have merit.

Public Hearing opened at 7:22 p.m.

Jeff Tolman, 433 S 200 W, lives just north of the development and said this decision will affect many people. He has great sensitivity regarding children and auto accidents and is concerned about 450 S becoming a through street. He lived on 450 S for 17 years, and the section closest to 200 E has no safe access for children. He asked that the entrance on Frontage Road be moved further to the south. Glovers Lane was designed to accommodate additional traffic and is a much better option than either 450 S or 620 S.

Ryan Perkins, 147 E 450 S, asked the Council to imagine the steep grade at the top of the unapproved street in Rice Farms. The upper portion of 450 S is narrower and just as steep, and there is no sidewalk on the south side, but every winter he watches cars slide backwards down the hill as they attempt to reach 200 East. The same reasons that the road in Rice Farms was not approved should also apply to 450 S. He has not heard any discussion about the 450 S 200 E intersection, and he asked the Council to help divert traffic away from that intersection.

Rebecca Larsen, 599 Glenhill Court, said the residents along 620 S have not been well represented. Their street is just as steep as 450 S, and there are just as many children in the area. She has been seeking relief for 5 years by signing every petition for speed bumps, road signs, striped lines and numbers in an effort to encourage drivers to slow down. She

thought the Rice Farms development would bring some relief but that did not happen. She knows that a through street on 450 S will not eliminate the problem, but it will help.

Kelly Brown, 161 E 450 S, lives near the upper portion of 450 S where the street is only 27 feet wide from the gutter to the end of the pavement. There is no curb, gutter, or sidewalk on the south side of the street, and there is only a sidewalk (no park strip) on the north side. It is a substandard, bottleneck street that was never designed to be a main thoroughfare, and he is concerned about children and traffic. He is opposed to 450 S being a through street.

Jeff Wells, 445 S 75 W, lives on the corner directly across the street from the proposed entrance to this development. The corner is a bottleneck for all the children walking to school, and he and his family have to be very careful as they back out of their driveway. The narrow street with no sidewalks was not built to be a thoroughfare.

Logan Peterson, 68 E 450 S, thanked the Mayor and the Council for their service to the City and he is against extending 450 S. The Planning Commission stated that 450 S is safer because it is narrower, but that is not accurate. Residents on the street frequently see cars going too fast down 450 S. The lack of a sidewalk on the south side is a concern because sidewalks. If 450 S goes through, traffic will increase because that route is a shorter distance from I-15, and people will eventually choose the path of least resistance.

Robert Leavitt, 511 S 111 W, owns this property and referred to Plan B which shows that 450 S was never intended to be a through street. His parents allowed 620 S to be a through street because it was 60 feet wide and could handle the traffic. A 27-foot wide street should never be a through street because of additional traffic and risk to children.

Wes Holmes, 39 W 620 S, has lived on 620 S for 29 years, and in 1998 when the road connected 620 S to 200 E, City Manager Max Forbush and Police Chief Jeff Jacobson met with him and other neighbors and promised that when the Leavitt property was developed, 450 S would go through to the Frontage Road, consistent with the MTP. The City must enforce the MTP and keep its promise. He submitted a petition with 60 signatures from residents on 620 S and said this is about fairness—all they are asking is that the traffic burden be shared.

Shannon Leavitt, 511 S 111 W, said her family has owned this property for 50 years. She gave a brief history of the roads in the area and informed the Council that her dad donated 620 S to the City and requested that 450 S be left as it was. They never knew there was a MTP until 2001, and her dad said many times 450 S was never meant to be a through street. She told **Mr. Holmes** and other residents on 620 S that they have their homes and property because her dad donated 620 S. She asked the Council to respect her parents' wishes.

Doug Julander, 487 S 50 W, pointed out that 50 W is another street that needs to be considered. When anyone gets to the end of 50 West they cut across 450 S. There is no defined crosswalk—everyone just cuts across 450 S, and it is a safety issue. There is a lot of valid concern regarding 450 S near 200 E, but there also needs to be concern regarding the intersection at 50 W. He enjoys running on all of the streets in Farmington, but he avoids the top of 450 South in the winter because he has nearly been hit by vehicles sliding out of control on a very steep street.

Rich McKenna, 62 E 450 S, lives in the center section of 450 S and asked the Council to consider the fact that this area currently has a corridor that safely delivers children to the front door of Farmington Elementary. This proposal would eradicate that avenue. Residents who live east and south of Woodland Park enter at the top of 450 S or at 40 E or at 50 W, and the routes are as safe as they can be, but increased traffic on 450 S would hinder that. He respects his neighbors on 620 S and their desire to ease the burden on 620 S, but the street width of 450 S is not even close to the City's standard street width of 60 feet.

Public Hearing closed at 8:00 p.m.

Mayor Harbertson congratulated the residents on the civility of their comments regarding this difficult situation. He thanked the developer for his proposal and for listening to the neighbors' valid concerns. He lived on 50 W from 1983-1993 and understands the desire for safety. He received numerous complaints from residents on 620 S regarding the speed of traffic on their street, so he spent a day using a speed gun on 620 S. He clocked over 200 cars, and not one car was driving 45 mph; only a few went 40 mph. Sometimes people heighten the concerns they face in their neighborhood.

Jim Talbot also thanked the residents and asked the developer if he could change the access street from Lot 118 to Lot 116 to allow a larger S turn. **Mr. Balling** said it would not be his preference because all of the lots are interior facing which makes the corners challenging. **Mr. Talbot** recently drove down 475 S, and a 3-way stop at the bottom of the hill and an S curve may help calm the traffic. He thanked the developer for his decision to have fewer homes in the project, to listen to the residents, and to be flexible.

John Bilton asked if it would be possible to widen and/or install curb, gutter and sidewalk on the upper portion of 450 S. **David Petersen** said it is built out, and the City to install curb and gutter there would be to do it themselves. They would have to obtain a right of way by purchasing the property and then pay for the improvements. He also asked about the requirements for having a crosswalk at 50 W and was told that he would need to check with the Police Department.

Jim Young said he wished there was a solution that would satisfy both parties, but he would vote not to extend 450 S. It is a substandard street that already has problems and challenges, and to further complicate that would not be wise. The negative impacts of extending 450 S are far greater for that neighborhood than the residents on 620 S because 620 S is a street that was designed to accommodate additional traffic.

Cindy Roybal said she understands both sides of the issue. She raised her children on a street that initially was not a connector, but years later when it became a connector it was well used by all of the residents and it alleviated traffic. The top priority is always safety for the children. She was out of town for several days and did not have a chance to look at 450 S.

Options for calming traffic (speed bumps, S curves, and solar speed and stop signs) were discussed, and **John Bilton** asked the City Planner to comment on the traffic study. **Mr. Petersen** said Traffic Engineer **Tim Taylor** told him that the capacity of a street is dictated by the level of service, and the level on this local street network is so high (uncongested) that it

will have little impact on this neighborhood. The Mayor said the item could be tabled if the Council wanted additional time to study the issue, and the developer said he would be fine with the delay because he is waiting for a response from FEMA on several flood plain issues.

Motion:

Cindy Roybal made a motion to table action on the Schematic Plan for the Kestrel Bay Estates PUD Subdivision until the August 20, 2013 City Council Meeting. **Jim Young** seconded the motion which was unanimously approved.

Motion:

Cindy Roybal made a motion to table action on the Schematic Plan for the Kestrel Bay Estates PUD Subdivision until the September 3, 2013 City Council Meeting so as to look at traffic patterns after school starts. **Jim Young** seconded the motion which was unanimously approved.

Cory Ritz arrived at the meeting at 8:45 p.m.

SUMMARY ACTION

1. Approval of Minutes from the July 2, 2013 and July 16, 2013 meetings
2. Proclamation for “Attendance Awareness Month”
3. Nomination of Robinson homes for the Historic Landmarks Register
4. Park Lane Restriping Proposal
5. Revised Final Plat/amended Development Agreement for the Meadow View Conservation Subdivision.

Motion:

Jim Talbot made a motion to approve Items 1, 2, 4, and 5 on the Summary Action List. Item 3 will be on the August 20, 2013 agenda. The motion was seconded by **Jim Young** and unanimously approved. **John Bilton** abstained from the vote on the July 16, 2013 Minutes because he was not in attendance.

NEW BUSINESS:

Discussion on changing Recycling Rates for Residents

Mayor Harbertson explained that the current rate is \$3.85 per can, and staff is proposing a drop to \$3 per can per month. The City Council approved the recommendation and requested a revised fee ordinance be prepared for further approval.

Status of Main Street Well

Dave Millheim reported that the water is still slightly colored and has an odor, and those issues are not acceptable to some residents. Although the water meets state safety requirements, it is has been difficult to determine how significant the problem is because of

continual fluctuation. He believes that as environmental engineers gather data and study facts, City leaders will be able to make smart decisions and solve the problem.

City Engineer **Paul Hirst** said the City has three wells which provide a large portion of its drinking water, Weber Water has two wells, and Lagoon has several wells. During the process of drilling the Main Street Well, coloration and sulfur issues were discovered, but the City determined that the issues could be solved. Chlorine was added and the water was thoroughly tested to meet state standards, and then it ran to waste for 2 months but then the City received numerous complaints from residents regarding the color and smell of the water. Well water continually changes and wells age, and although the City does not have a crucial need for the water, there will be a need in the near future. The prediction is that by the year 2053 when Farmington is built out, it will be 2000 acre feet short of water.

When water rates were increased, Lagoon began using its own wells, and the **Mayor** asked if there has been a difference in the City's well production. Water Superintendent **Larry Famuliner** said they have not seen a significant difference. They ran the well to waste 6 hours a day (440 gallons per minute) in July, but when they began using the water, the City received numerous complaints. They tried running more gallons per minute and adding chlorine (2 ppm) and neither option worked. The affected areas are located near the well, but there have been unsatisfied residents as far away as 1400 N, the Ranches, and Glover Lane.

Chet Hovey and **Dave Lore** of Advanced Environmental Engineering will review the historical data, collect numerous samples, and study each issue thoroughly. They said it is important for the residents to be involved because they will provide valuable data. They complimented CRS, and the Council advised them to move forward with their study.

Contract with Farmington Area Baseball League (FABL)

Dave Millheim listed several issues to consider: (1) the amount of the deposit; (2) consideration for the use of the fields; and (3) a City Council representative to sit on FABL's Board of Directors; and (4) an annual review of FABL by the City. This contract will set rules that need to be followed by both the City and FABL. **John Bilton** said FABL had three state championship teams who represented Utah in out-of-state zone and regional tournaments. He stressed the importance of volunteers—a crucial element for FABL's success. **Cory Ritz** expressed concern about the lights and garbage and said the deposit needs to be large enough to cover these two issues. **Jim Talbot** agreed and said the City and FABL must improve their relationship and respect each other. The **Mayor** and the Council agreed that there must be an annual dialogue with FABL.

Motion:

John Bilton made a motion to approve the draft contract with the exception that the amount of the deposit will be changed from \$2000 to \$500, and **Cindy Roybal** seconded the motion which was unanimously approved.

GOVERNING BODY REPORTS:

Mayor – Scott Harbertson

- The League of Cities and Towns Conference will be held September 11-13, and he asked the Council to inform **Holly Gadd** of their plans.
- He attended a meeting with UDOT and UTA to discuss the Bus Rapid Transit (BRT) proposal and asked about the process to have benches and/or shelters at the City's bus stops. There is an annual budget for benches, and the cities with the highest ridership are highest on the list. They also do a 50-50 split which allows a City to move up on the list. **Dave Millheim** said he would gather additional information.

City Council

Cory Ritz:

- He received a letter from a resident who complimented the City on the art work in the City building but criticized everything else—including the sound system.

John Bilton:

- He received an email regarding waiving the fees for the children of coaches in the City's sports programs and the City Manager agreed to follow up on the issue.
- He also received two heavily worded emails objecting to the phrase "playing possum" in an article in the June newsletter written by the Police Department.

City Manager – Dave Millheim

- The June Fire Activity Report was included in the staff report.
- Associate City Planner **Christy Alexander** is leaving in 2 weeks to work in Park City.
- Fire Captain **Rich Love** had a serious heart attack and six bypass surgeries. It will be a long recovery, and his future as a fireman is not known.
- The City Engineer position is now open, and the goal is to hire someone by November.
- Garbett Homes would like to donate a parcel of property to the City near a trailhead east of the Maverik store, but staff does not see a purpose for the property and does not plan to accept the donation; the **Mayor** and Council agreed.
- The D&RG trail is progressing.
- The new street on Oak Lane is beautiful, and resident **Jim Hansen** and his wife hosted a barbecue for the Public Works Department. The residents are so grateful, and it was gratifying to see City employees enjoy the recognition.

- UDOT has committed to installing a traffic signal on 200 W and State Street sometime this fall. The City requested poles with powder coating rather than cables.
- The Street Light Proposal to change 900 light fixtures in the City to induction lighting will be discussed during the work session on August 20, 2013 if the financing documents are ready in time.

CLOSED SESSION

Motion:

At 10:46 p.m. **John Bilton** made a motion for the Council to go into a closed meeting to discuss the agenda for the August 20, 2013 meeting and to discuss potential litigation and the acquisition of real property. The motion was seconded by **Cindy Roybal** and unanimously approved.

Sworn Statement

I, **Scott C. Harbertson**, Mayor of Farmington City, do hereby affirm that the items discussed in the closed meeting were as stated in the motion to go into closed session and that no other business was conducted while the Council was so convened in a closed meeting.



Scott C. Harbertson, Mayor

Motion:

At 10:58 p.m. a motion to reconvene into an open meeting was made by **Cindy Roybal**, seconded by **John Bilton**, and unanimously approved.

ADJOURNMENT

Motion:

Cindy Roybal made a motion to adjourn the meeting. The motion was seconded by **Cory Ritz** and unanimously approved. The meeting was adjourned at 11:00 p.m.



Holly Gadd, City Recorder
Farmington City Corporation





FARMINGTON CITY

SCOTT C. HARBERTSON
MAYOR

JOHN BILTON
RICK DUTSON
CORY R. RITZ
JIM TALBOT
SID YOUNG
CITY COUNCIL

DAVE MILLHEIM
CITY MANAGER

TO: Honorable Mayor and City Council

FROM: Paul Hirst, City Engineer

DATE: June 24, 2011

SUBJECT: Status of the water quality testing on the Community Center Well

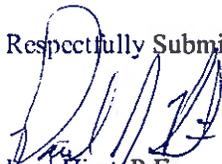
RECOMMENDATION

Authorize proceeding with design of the well house including equipment and building. No special treatment equipment will be considered at this time. The building will not be sized to allow for future treatment equipment.

BACKGROUND

- Water taste, odor, color tests done on May 4 and May 9, 2011.
- Hydrogen Sulfide levels were reduced with increased pumping quantity of 800 gpm
- Blending with chlorine, which is standard on all City wells, appears to be effective treatment for removing the sulfide odor.
- Other more costly treatment methods are not cost effective given the low concentrations of sulfide
- Water color caused by Turbidity will not be detected unless it is closely examined against other non-turbid water.
- Blending the water with other City water will remove any sulfide and turbidity residue.

Respectfully Submitted



Paul Hirst, P.E.
City Engineer



INTRODUCTION

The new Community Center Well was drilled and pump tested in January of 2011. As part of the testing for the well, a lab was contracted to perform a detailed analysis of the water chemistry including water quality testing. The test results were submitted and reviewed by the Division of Drinking water and were found to meet all State standards. Thus, the water could be turned into the system without any treatment. However, during pump testing, the discharge water was observed to have a "rotten egg odor". Because Farmington residents have typically demanded higher standards for water quality, it was determined that additional research and testing should be done to see if the water quality could be improved. Because the levels of sulfur in the water causing the color and odor problems are relatively low, it was hoped that chlorination (oxidation) might be enough to treat the problem. Oxidation is the simplest and least expensive form of treatment available to treat sulfides.

TESTING

On Wednesday, May 4th, a submersible pump was used to pump the well at 300 gallons per minute (gpm). Water samples were taken and tested for taste, odor, color, sulfide and chlorine residual. The raw well water and various blends of City water were tested with and without added chlorine to observe the effect on the various parameters. It should be noted that the City water typically has a chlorine residual of approximately 0.3 mg/L. The observations and measurements from this first round of testing are shown in the table below.

RESULTS OF TESTING AT 300 GPM

Run	Time (min)	% Well Water	% City Water	Chlorine Added	Color	Odor	Taste	Sulfide (mg/L)*	Chlorine Residual
1	120	100	0	0	slight	bad	bad	0.04	0
2	135	50	50	0	none	minor	ok	0.01	
3	150	25	75	0	none	good	good	0.01	
4	180	100	0	1ppm	slight	minor	ok	0.02	0.35
5	210	50	50	1ppm	none	good	good	0.02	0.12
6	240	25	75	1 ppm	none	good	good	0.01	0.08

* 1 mg/L = 1 part per million

The results of the testing showed that the addition of chlorine, as well as blending with the City's current culinary sources improved the taste, odor and color issues.

Following the initial testing, there was some concern that pumping at the 300 gpm rate may not be fully representative of water quality conditions at the proposed pumping rate of 800 gpm. In order to observe concentrations at this higher pumping rate, a larger submersible pump was installed in the well.

On Monday, May 9th, the well was pumped at approximately 800 gpm and similar tests were repeated. For this test, more sophisticated equipment with a lower detection limit was used to increase the precision of the measurements. The results of this second round of testing are shown in the table below.



RESULTS OF TESTING AT 800 GPM

Run	Time (min)	% Well	% City	Chlorine Added	Color	Odor	Taste	Sulfide ($\mu\text{g/L}$)*	Chlorine Residual	Turbidity (NTU)
1	15	100	0	0	Yellowish	Bad	Bad	41	0	15.2
2	30	50	50	0	Slight	minor	good	19	0.25	8.2
3	45	25	75	0	none	none	good	10	0.3	3.6
4	60	50	50	1ppm	none	minor	good	6	0.5	4
5	75	25	75	1ppm	none	none	good	0	0.4	2
6	90	100	0	0	slight	slight	ok	14	0	8.7
7	180	100	0	0	slight	slight	ok	14	0	6.25

* 1 $\mu\text{g/L}$ = 1 part per billion = 0.001mg/L)

The results of testing at 800 gpm confirmed that chlorination is an effective treatment for the taste and odor of the water. Blending the well water with other City water sources was also found to improve turbidity levels.

Of significance, during this testing period, it was noticed that the color, odor, and taste were improving with time without having to add chlorine or mix the water. After an hour and a half of pumping the sulfide had reduced from 41 $\mu\text{g/L}$ to 14 $\mu\text{g/L}$ and the Turbidity had been reduced from 15.2 NTU's to 8.7 NTU's with only slightly noticeable odor and color.

Turbidity is the measure of cloudiness in the water. At a turbidity of 15 NTU (highest seen at the well), you cannot see a difference in the water unless you are comparing it side by side with another source.



Turbidity standards of 5, 50, and 500 NTU



TREATMENT OPTIONS

With the Community Center well's measured levels of hydrogen sulfide, no additional treatment beyond chlorination was recommended by any of the suppliers contacted. The levels are low enough that further treatment should not be considered unless the water chemistry changes over time. If the hydrogen sulfide were to increase in the future, there are several treatment options that could be considered. The different treatment methods vary greatly depending on levels of sulfur, pH of water, amount of water to be treated, costs, availability of space for infrastructure, intensity of maintenance, etc. Because of the wide variety of variables in future treatment, additional treatment should not be considered until such time as it becomes necessary and the treatment can be tailored to meet the changed water conditions. A summary of the treatment options are outlined below.

Chlorination (oxidation)

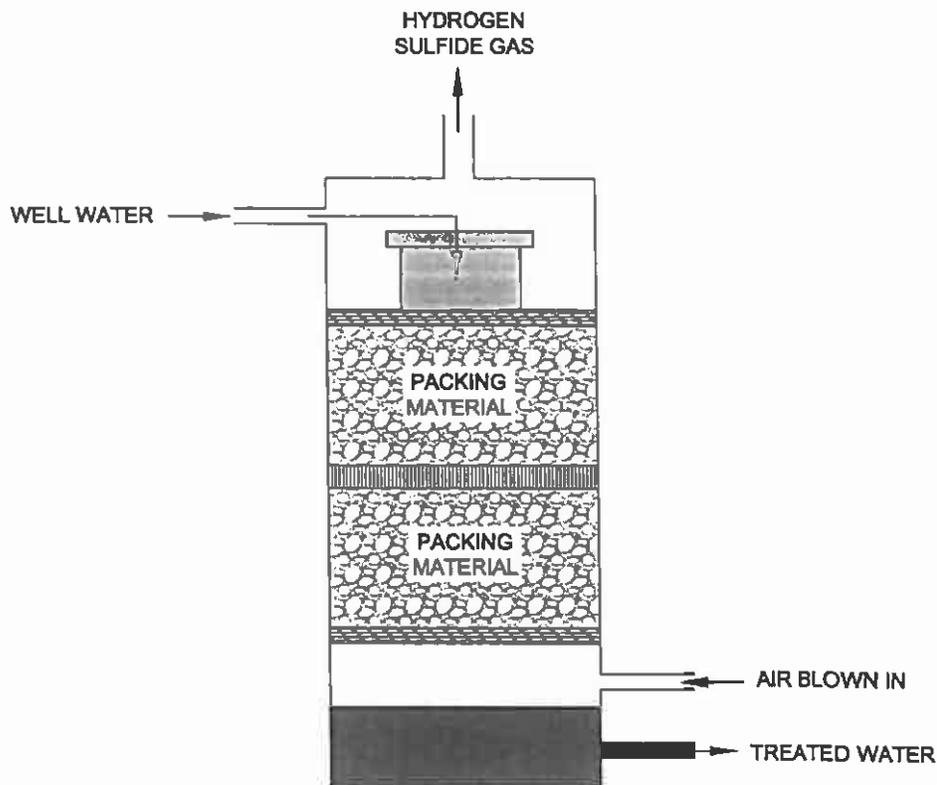
This is the simplest and least expensive method of treatment. Chlorine is added to the well water which oxidizes the hydrogen sulfide. This has proven to be effective in treating the odor and taste symptoms from sulfides, but chlorination by itself does little to remove the color or turbidity from the water. To reduce turbidity, blending will be required. Most often chlorination is done in combination with some kind of filtration (sand, activated carbon, or other) to capture any particulates that result from the oxidation process. In this case, a filter would not be recommended because the levels of the sulfide are so low that any particulates produced would not be captured in a filter.

Blending

Blending does not treat the water, but rather lessens the symptoms of the sulfur presence by diluting the well source with higher quality water. This is most commonly done in reservoirs or in dedicated transmission lines with inline diffusers to aid in the mixing to provide a more controlled blending environment. However, this would be very costly to do with Farmington's system as it exists now. Some blending occurs naturally in the system through the distribution piping as water is delivered to customers.

Air Stripping

Air stripping is a type of aeration process where gas is removed from water, in this case hydrogen sulfide. There are many different kinds of air stripping devices available including waterfall aeration such as a packed tower. A packed column consists of a cylindrical tower, a packing material (usually plastic, steel or ceramic) and a blower. The well water is pumped into the top of the tower and blowers are used to introduce air through the bottom. A typical configuration for packed tower aerator is shown below. With this type of treatment the off-gas sometimes has to be treated and the towers get packed with solids making them inefficient. Another disadvantage of this system is that we would break head with the well pump and have to install a tank to capture the water after treatment and then re-pump the water. If the pH of the water is 7 or more, additional treatment to decrease the pH would have to be considered before using the air filter. These systems are expensive, require significant additional infrastructure (storage tank and booster pump), and take up a lot of room. For a system to handle 800 gpm, the aerator would have a footprint of 6'x6'.



Filtration

There are several different filtration systems that could be used to treat sulfur. Two of the most common filter systems include manganese greensand and catalytic (activated) carbon. During this process the water flows through the filter where the sulfur particles are filtered through the sand or carbon. The greensand filter has a special coating that oxidizes the hydrogen sulfide gas to sulfur particles which are then filtered through the sand. Activated carbon absorbs the sulfides as it is run through the filter. Once the media is saturated, the carbon has to be replaced. This process also requires head to be broken on the well pump, requiring the water to be stored and pumped into the system after it is treated. Filtration is more commonly used on smaller projects such as privately owned wells because of the limitations in the quantity of water the filters can handle.

Ozone

Ozone treatment is another way to start the oxidation process of hydrogen sulfide. Most ozone treatment is done in packaged treatment systems. In this process, ozone is generated and added to the water in the form of a gas. Ozone is similar to chlorine in how it breaks down the hydrogen sulfide but tends to work faster than chlorine. This alternative does not require a break in head, and the system is relatively small and could fit inside the pump house with little to no



modifications. However, because air (gases) is introduced into the system, the City might need to add some air-release valves in the system. And before ozone is considered, it is recommended that the dosing of chlorine be increased. Usually increasing the chlorine concentration will work just as well as ozone.

For discussion purposes if we assumed that we needed to treat 0.1mg/L hydrogen sulfide at 800 gpm, we would need a system that could produce 81grams/hour of ozone. Only a small portion of the 800 gpm would be divided off of the mainline and treated (less than 50gpm). It would then be reintroduced into the line using nozzles for mixing.

CONCLUSIONS AND RECOMMENDATIONS

It is recommended that the City move forward with design of a well house, equipping the well and connecting it to the City's culinary water system. Without any treatment, the new water source meets all water quality standards from the State and can be connected to the system. The City's standard of practice is to install in-line chlorination in all of the City's well houses, which will significantly improve the odor and taste of the water before it enters the system. In addition, the natural blending that occurs through the system as it mixes with other City sources, improves the water quality.

It is also recommended that the waterline from the well house be a dedicated transmission line to State Street. This will allow for natural blending to occur at State Street with the City's other sources. The existing service line in Main Street would remain separate from the new line, giving more contact time for the chlorine through the new transmission line and allowing some mixing to occur before the water is distributed to residents.

From an operational standpoint, there are also some things that can be done to minimize the impact of this water on the Farmington Residents.

- If the well water were pumped at night, the majority of the water would be used to fill the reservoirs which would enable more thorough mixing with other City sources.
- The second test showed that the sulfide and turbidity cleared up with continued pumping. By running the pump for longer periods of time, the symptoms of sulfide should lessen.
- The new well water could also be introduced slowly, so that residents can get used to the new source.

Should the chlorination and blending not produce acceptable quality water in the future, additional treatment methods such as air stripping, filtration or ozonation could be added. In researching the different treatments, it was hoped that we could design the building to accommodate more aggressive treatment in the future if it were to be needed. However, because of the wide variety of treatment options and the size and complexity of some of the systems, it is not cost effective to accommodate for that at this time. It is recommended that if the hydrogen sulfide concentrations increase in the ground water in the future, that increasing the concentration of chlorine be considered as the first treatment method. The costs of other treatments are much higher than the chlorination and blending, and should only be considered if necessary.



Chemtech-Ford Laboratories

Certificate of Analysis

Lab Sample No.: 1102090-01

Name: CRS Consulting Engineers, Inc.	Sample Date: 3/22/2011 8:30 AM
Sample Site: Farmington Community Center	Receipt Date: 3/22/2011 11:10 AM
Comments:	Sampler: Mark Chandler
Sample Type: Drinking Water	Source Code:
	System No.:

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	Flag
Calculations								
Hardness, Total as CaCO3	28		1	mg/L	3/30/2011 15:00	MJB	SM 2340 B	
Langelier Index	-0.65			None	3/30/2011 15:00	MJB	Calculation	
Inorganic								
Alkalinity - Bicarbonate (CaCO3)	136		1.0	mg/L	3/22/2011 14:00	TSM	SM 2320 B	
Alkalinity - Carbonate (CaCO3)	ND		1.0	mg/L	3/22/2011 14:00	TSM	SM 2320 B	
Alkalinity - CO2 (CaCO3)	100		1.0	mg/L	3/22/2011 14:00	TSM	SM 2320 B	
Alkalinity - Hydroxide (CaCO3)	ND		1.0	mg/L	3/22/2011 14:00	TSM	SM 2320 B	
Alkalinity - Total (as CaCO3)	111		1.0	mg/L	3/22/2011 14:00	TSM	SM 2320 B	
Ammonia as N	0.3		0.2	mg/L	3/24/2011 12:00	TSM	SM 4500 NH3-D	
Chloride	38	250	1	mg/L	3/22/2011 14:00	TSM	EPA 300.0	
Color	ND	15	0	Color Units	3/22/2011 15:30	JSH	EPA 110.2	
Conductivity	365		1	umhos/cm	3/25/2011 11:00	FAJ	EPA 120.1	
Cyanide, Free	ND	0.2	0.05	mg/L	3/28/2011 8:00	TJS	SM 4500 CN-E	
Fluoride	0.2	4	0.1	mg/L	3/22/2011 14:00	TSM	EPA 300.0	
MBAS Surfactants	ND	0.5	0.08	mg/L	3/24/2011 8:00	FAJ	SM 5540 C	
Nitrate as N	ND	10	0.1	mg/L	3/22/2011 14:00	TSM	EPA 300.0	
Nitrite as N	ND	1	0.1	mg/L	3/22/2011 14:00	TSM	EPA 300.0	
Odor	ND	3	0	0 - 5 Scale	3/22/2011 15:30	JSH	SM 2150 B	SPH
pH	8.0	8.5	0.1	pH Units	3/22/2011 17:00	JSH	SM 4500 H-B	SPH
Phosphate, ortho	0.83		0.25	mg/L	3/24/2011 8:15	FAJ	SM 4500 P-E	
Sulfate	10	250	1	mg/L	3/22/2011 14:00	TSM	EPA 300.0	
Total Dissolved Solids (TDS)	234	1000	10	mg/L	3/23/2011 16:40	JSH	SM 2540 C	
Turbidity	0.60	5	0.02	NTU	3/22/2011 17:00	JSH	EPA 180.1	



Chemtech-Ford Laboratories

Certificate of Analysis

Lab Sample No.: 1102090-01

Name: CRS Consulting Engineers, Inc.	Sample Date: 3/22/2011 8:30 AM
Sample Site: Farmington Community Center	Receipt Date: 3/22/2011 11:10 AM
Comments:	Sampler: Mark Chandler
Sample Type: Drinking Water	Source Code:
	System No.:

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	Flag
Metals								
Aluminum, Total	0.05	0.2	0.05	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Antimony, Total	ND	0.006	0.0005	mg/L	3/31/2011 15:38	PNM	EPA 200.8	
Arsenic, Total	0.0018	0.01	0.0005	mg/L	3/31/2011 15:38	PNM	EPA 200.8	
Boron, Total	ND		0.05	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Barium, Total	0.034	2	0.005	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Beryllium, Total	ND	0.004	0.001	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Calcium, Total	7.7		0.2	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Cadmium, Total	ND	0.005	0.0005	mg/L	3/31/2011 15:38	PNM	EPA 200.8	
Chromium, Total	ND	0.1	0.005	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Copper, Total	0.0022	1.3	0.0010	mg/L	3/31/2011 15:38	PNM	EPA 200.8	
Iron, Total	0.14	0.3	0.02	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Lead, Total	ND	0.015	0.0005	mg/L	3/31/2011 15:38	PNM	EPA 200.8	
Mercury, Total	ND	0.002	0.0002	mg/L	3/31/2011 15:38	PNM	EPA 200.8	
Magnesium, Total	2.1		0.2	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Manganese, Total	0.045	0.05	0.005	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Nickel, Total	ND	0.1	0.005	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Potassium, Total	1.2		0.5	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Selenium, Total	0.0006	0.05	0.0005	mg/L	3/31/2011 15:38	PNM	EPA 200.8	
Silver, Total	ND	0.1	0.0005	mg/L	4/4/2011 17:44	PNM	EPA 200.8	
Silica, (as SiO2) Total	20.9		0.1	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Sodium, Total	65.2		0.5	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Thallium, Total	ND	0.002	0.0005	mg/L	3/31/2011 15:38	PNM	EPA 200.8	
Zinc, Total	ND	5	0.01	mg/L	3/25/2011 15:12	MJB	EPA 200.7	
Radiochemistry								
Gross Alpha	0.1	15		pCi/L	4/8/2011 11:21	UL	EPA 900.0	SL-30
Gross Alpha LLD	3.0			pCi/L	4/8/2011 11:21	UL	EPA 900.0	SL-30
Gross Alpha Variance	0.6			pCi/L	4/8/2011 11:21	UL	EPA 900.0	SL-30
Gross Beta	3.6	4		pCi/L	4/8/2011 11:21	UL	EPA 900.0	SL-30
Gross Beta LLD	3.0			pCi/L	4/8/2011 11:21	UL	EPA 900.0	SL-30
Gross Beta Variance	0.9			pCi/L	4/8/2011 11:21	UL	EPA 900.0	SL-30
Radium-228	0.55			pCi/L	4/7/2011 15:03	UL	EPA 904.0	SL-30
Radium-228 LLD	1.0			pCi/L	4/7/2011 15:03	UL	EPA 904.0	SL-30
Radium-228 Variance	0.40			pCi/L	4/7/2011 15:03	UL	EPA 904.0	SL-30



Chemtech-Ford Laboratories

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Comments:	Sampler: Mark Chandler
Sample Type: Drinking Water	Source Code:
	System No.:

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	Flag
Carbamates								
3-Hydroxycarbofuran	ND		1.0	ug/L	3/22/2011 16:00	BTK	EPA 531.1	
Aldicarb	ND		1.0	ug/L	3/22/2011 16:00	BTK	EPA 531.1	
Aldicarb sulfone	ND		1.0	ug/L	3/22/2011 16:00	BTK	EPA 531.1	
Aldicarb sulfoxide	ND		1.0	ug/L	3/22/2011 16:00	BTK	EPA 531.1	
Carbaryl	ND		1.0	ug/L	3/22/2011 16:00	BTK	EPA 531.1	
Carbofuran	ND	40	1.0	ug/L	3/22/2011 16:00	BTK	EPA 531.1	
Methomyl	ND		1.0	ug/L	3/22/2011 16:00	BTK	EPA 531.1	
Oxamyl	ND	200	1.0	ug/L	3/22/2011 16:00	BTK	EPA 531.1	
Herbicides								
2,4,5-TP (Silvex)	ND	50	0.440	ug/L	3/25/2011 21:47	BTK	EPA 515.2	
2,4-D	ND	70	0.220	ug/L	3/25/2011 21:47	BTK	EPA 515.2	
Dalapon	ND	200	2.20	ug/L	3/25/2011 21:47	BTK	EPA 515.2	
Dicamba	ND		1.00	ug/L	3/25/2011 21:47	BTK	EPA 515.2	
Dinoseb	ND	7	0.440	ug/L	3/25/2011 21:47	BTK	EPA 515.2	
Pentachlorophenol	ND	1	0.088	ug/L	3/25/2011 21:47	BTK	EPA 515.2	
Picloram	ND	500	0.220	ug/L	3/25/2011 21:47	BTK	EPA 515.2	
Pesticides								
Endrin	ND	2	0.022	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
Heptachlor	ND	0.4	0.088	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
Heptachlor epoxide	ND	0.2	0.044	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
Lindane	ND	0.2	0.044	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
Methoxychlor	ND	40	0.22	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
PCB-1016	ND	0.2	0.20	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
PCB-1221	ND	0.5	0.20	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
PCB-1232	ND	0.5	0.20	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
PCB-1242	ND	0.5	0.50	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
PCB-1248	ND	0.5	0.50	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
PCB-1254	ND	0.5	0.50	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
PCB-1260	ND	0.5	0.50	ug/L	4/1/2011 18:13	BTK	EPA 508.1	
Toxaphene	ND		2.2	ug/L	4/1/2011 18:13	BTK	EPA 508.1	



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Comments:	Sampler: Mark Chandler
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	System No.:

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	Flag
Semi-Volatile Compounds								
Alachlor	ND	2	0.44	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Aldrin	ND		2.00	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Atrazine	ND	3	0.22	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Benzo (a) pyrene	ND	0.2	0.04	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Bis (2-ethylhexyl) Adipate	ND	400	1.30	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Bis (2-ethylhexyl) Phthalate	ND	6	1.30	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Butachlor	ND		0.50	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
alpha-Chlordane	ND	2	0.44	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
gamma-Chlordane	ND	2	0.44	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Dieldrin	ND		1.00	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Hexachlorobenzene	ND	1	0.22	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Hexachlorocyclopentadiene	ND	50	0.22	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Metolachlor	ND		0.50	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Metribuzin	ND		0.50	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Propachlor	ND		0.50	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Simazine	ND	4	0.15	ug/L	3/25/2011 15:19	MAH	EPA 525.2	
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,1,1-Trichloroethane	ND	200	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,1,2-Trichloroethane	ND	5	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,1,2-Trichlorotrifluoroethane	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,1-Dichloroethane	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,1-Dichloroethene	ND	7	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,1-Dichloropropene	ND		0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,2,3-Trichlorobenzene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,2,3-Trichloropropane	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,2,4-Trichlorobenzene	ND	70	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,2,4-Trimethylbenzene	ND	70	1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,2-Dichlorobenzene	ND	600	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,2-Dichloroethane	ND	5	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,2-Dichloropropane	ND	5	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,3,5-Trimethylbenzene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,3-Dichlorobenzene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,3-Dichloropropane	ND		0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
1,4-Dichlorobenzene	ND	75	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	



Chemtech-Ford Laboratories

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Comments:	Sampler: Mark Chandler
Sample Type: Drinking Water	Source Code:
	System No.:

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	Flag
Volatile Organic Compounds								
2,2-Dichloropropane	ND		0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
2-Chlorotoluene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
4-Chlorotoluene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Benzene	ND	5	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Bromobenzene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Bromochloromethane	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Bromodichloromethane	ND		0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Bromoform	ND		0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Bromomethane	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Carbon Tetrachloride	ND	5	1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Chlorobenzene	ND	100	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Chloroethane	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Chloroform	ND		0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Chloromethane	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
cis-1,2-Dichloroethene	ND	70	1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
cis-1,3-Dichloropropene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Dibromochloromethane	ND		0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Dibromomethane	ND	5	1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Dichlorodifluoromethane	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Ethyl Benzene	ND	700	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Hexachlorobutadiene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Isopropylbenzene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Methyl tert-Butyl Ether (MTBE)	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Methylene Chloride	ND	5	1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Naphthalene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
n-Butyl Benzene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
n-Propyl Benzene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
p-Isopropyltoluene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
sec-Butyl Benzene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Styrene	ND	100	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
tert-Butylbenzene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Tetrachloroethene	ND	5	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Toluene	ND	1000	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
trans-1,2-Dichloroethene	ND	100	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
trans-1,3-Dichloropropene	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Trichloroethene	ND	5	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	



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Comments:	Sampler: Mark Chandler
Sample Type: Drinking Water	Source Code:
	System No.:

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	Flag
Volatile Organic Compounds								
Trichlorofluoromethane	ND		1.0	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Vinyl Chloride	ND	2	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	
Xylenes, total	ND	10000	0.5	ug/L	3/23/2011 12:50	MAH	EPA 524.2	

Abbreviations

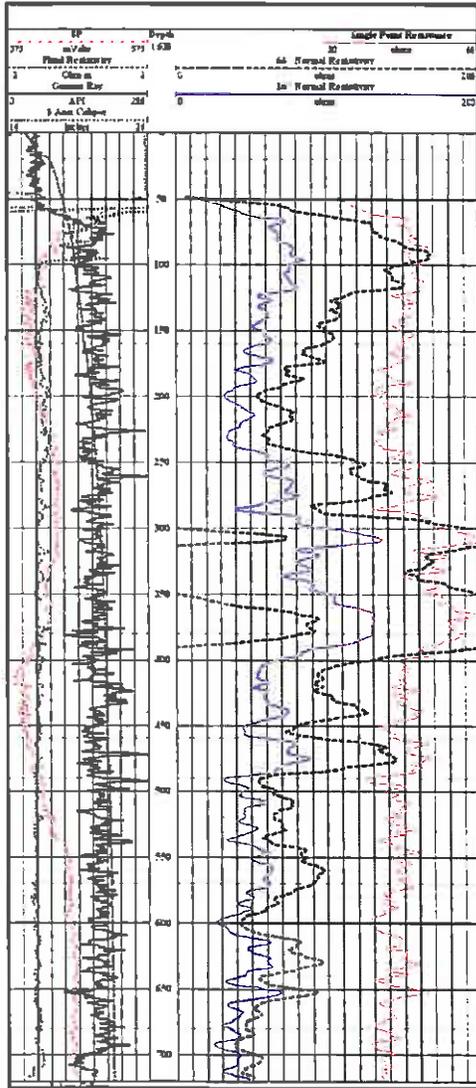
ND = Not detected at the corresponding Minimum Reporting Limit.
 1 mg/L = one milligram per liter or 1 mg/Kg = one milligram per kilogram = 1 part per million.
 1 ug/L = one microgram per liter or 1 ug/Kg = one microgram per kilogram = 1 part per billion.
 1 ng/L = one nanogram per liter or 1 ng/Kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

SPH = Sample submitted past method specified holding time.

SL-30 = Analysis performed by Underwriters Labs, 110 South Hill Street, South Bend, IN 46617.

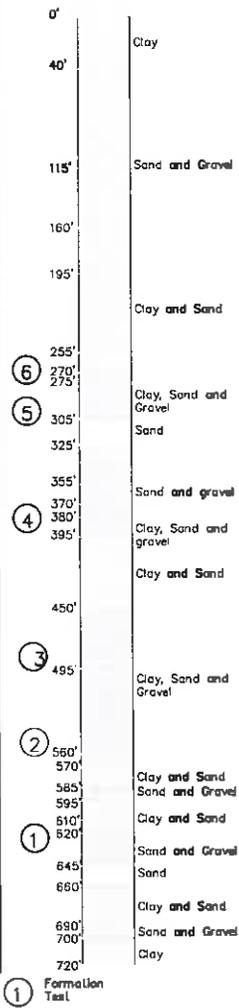
FIGURE 1 FARMINGTON CITY COMMUNITY CENTER WELL



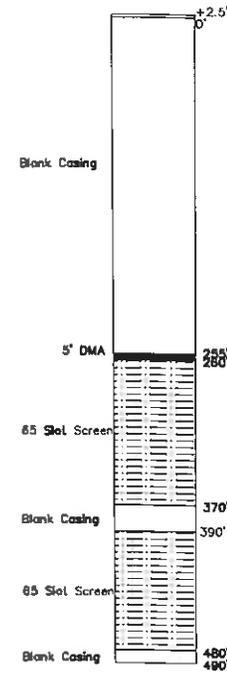
Formation Test	Location
1	302-314
2	328-338
3	405-500
4	372-412
5	288-328
6	242-282

Sieve Sample	Location
1	270
2	300
3	310
4	335
5	375
6	420
7	455
8	475
9	495
10	550
11	630
12	645
13	685

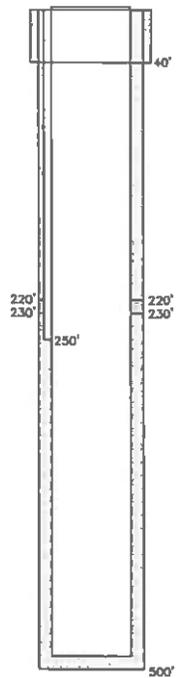
Drilling Log



Casing and Screens



Gravel Pack and Surface Seal



① Formation Test

Exhibit A

Frontage Road

Scale: 1" = 30'



Schematic Plat
Not to Be Recorded

75 West St. R=75.00'
L=61.08'
A=46.39°

50152.90' W
78.23'

A=05°09'23"

R=5659.56'

5017.23' E
68.82'

East
327.58'

620 South Street

741.66'

150.05'

300'15.40' E
13.62'

582'10.98' W
13.62'

500'31.39' W
13.62'

320.89'

R=272.57'
A=18°48'00"

9.34'

741.66'

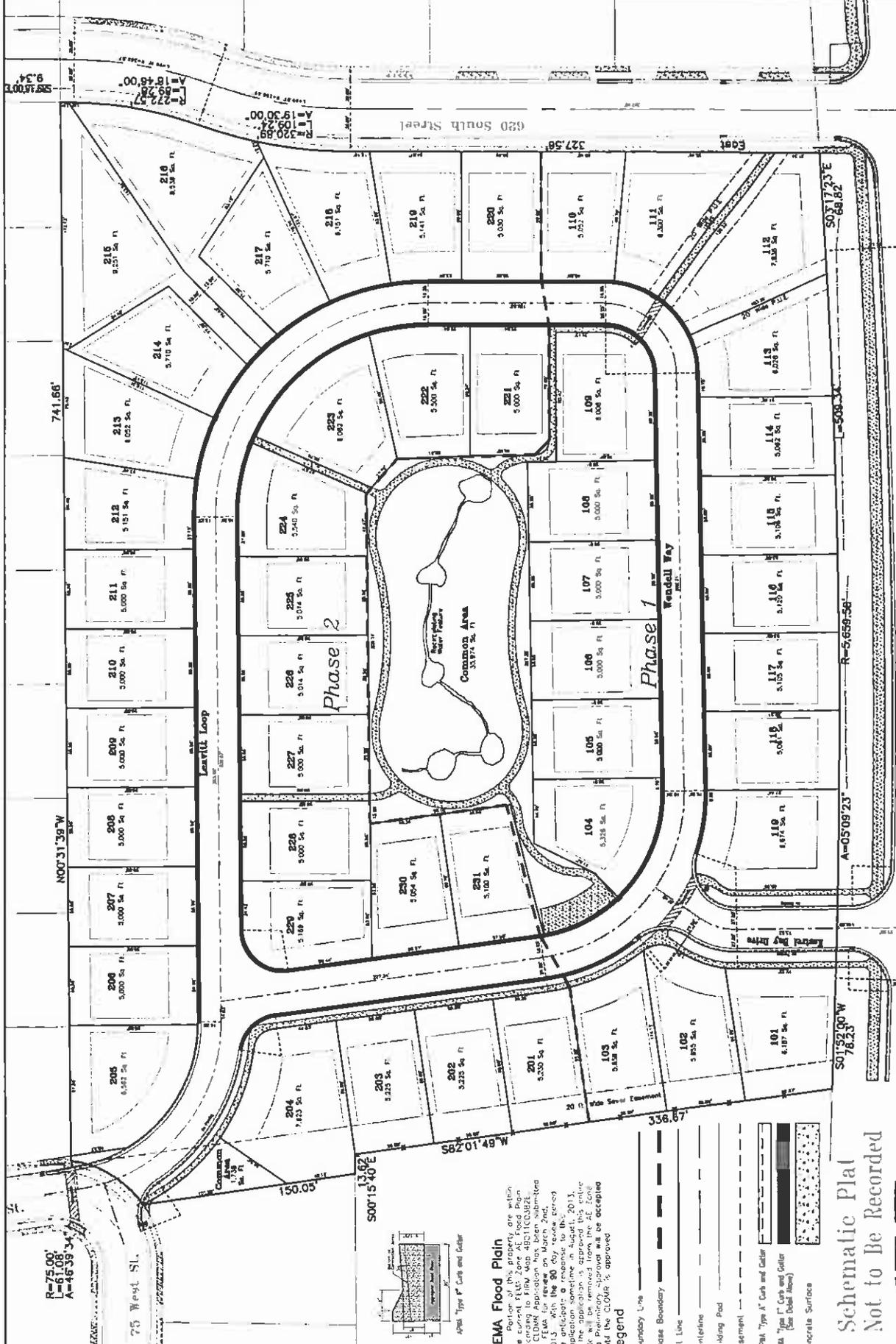
100'31.39' W

DR Being	Date	Description	By
DR Being	4-24-13		
Checked By	4-5-13		
Submittal Date	8-08-13		
File Number			

Kezrel Bay Estates P.U.D.
Schematic Site Plan
For Best Balling

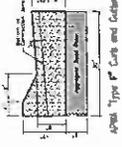


322 East Paces Lane
P.O. Box 805
Centerville, Utah 84014
Phone (801) 295-7237
Fax (801) 299-0418
Email: rpd@rpdcivil.com

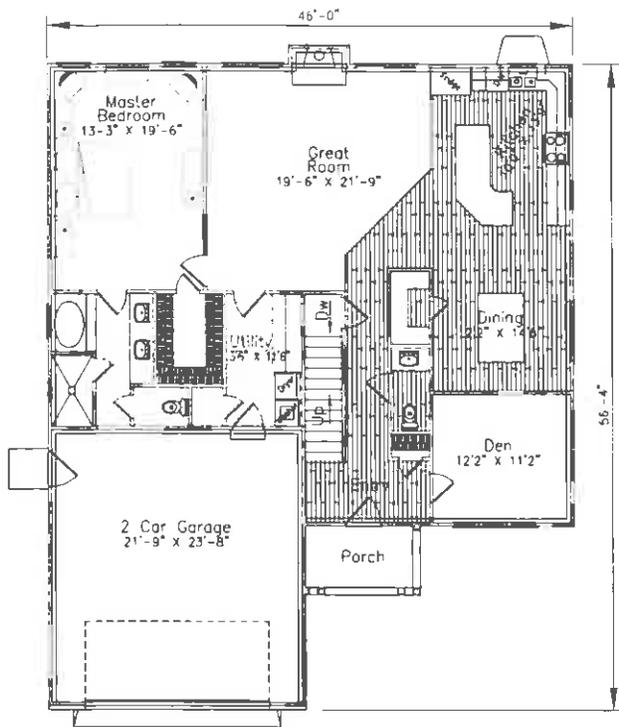


FEMA Flood Plain
Portions of this project are within the FEMA Flood Plain as shown on the Flood Insurance Rate Map (FIRM) No. 48011C0482Z. A CLOMR Application has been submitted to FEMA for the project. The project is located in the Flood Plain. The project is located in the Flood Plain. The project is located in the Flood Plain.

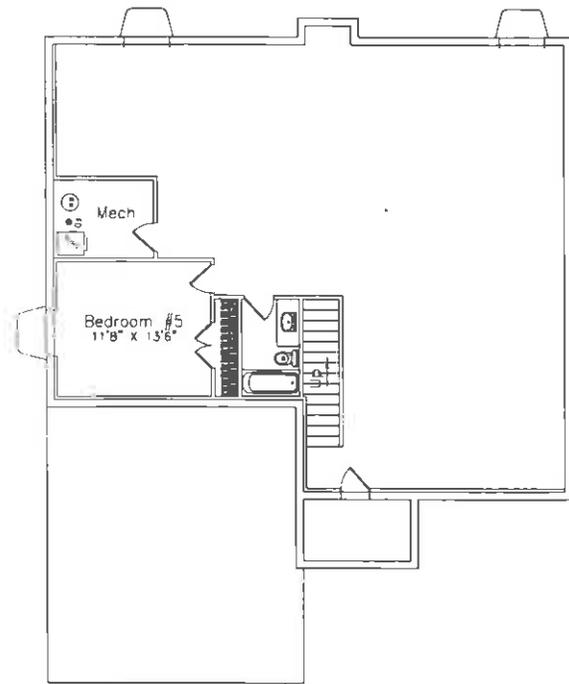
Legend
Boundary Line
Phase Boundary
Lot Line
Centerline
Building Foot
Easement
APM Type I' Curb and Gutter
APM Type I' Curb and Gutter (See Detail Plans)
Concrete Surface



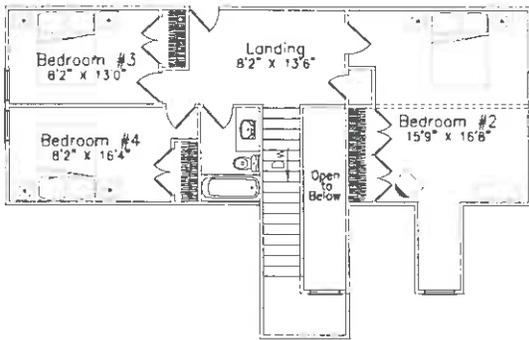
Type I' Curb and Gutter



Main Floor



Basement



2nd Floor

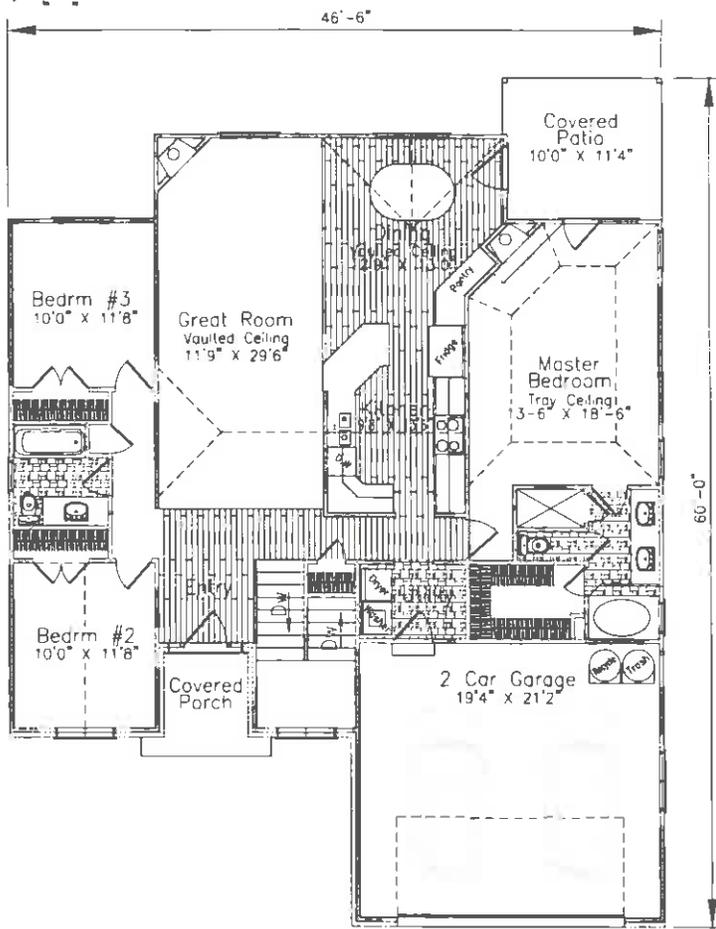
Barbary Floor Plan

Second Floor Area	717 sq.ft.
Main Floor Area	1,614 sq.ft.
Basement Floor Area	1,664 sq.ft.

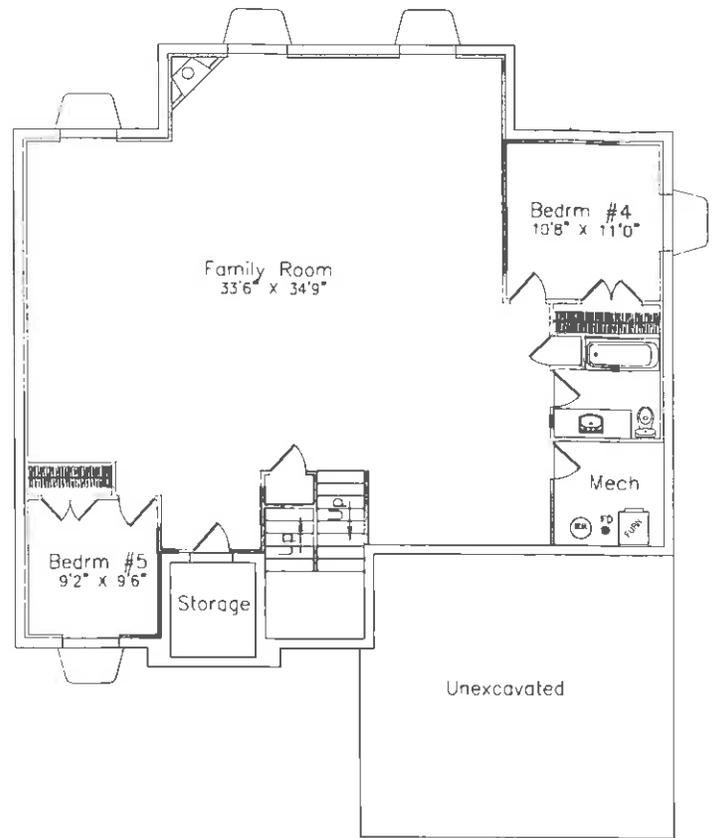
**Balling
Engineering**



Exhibit D-1



Main Floor



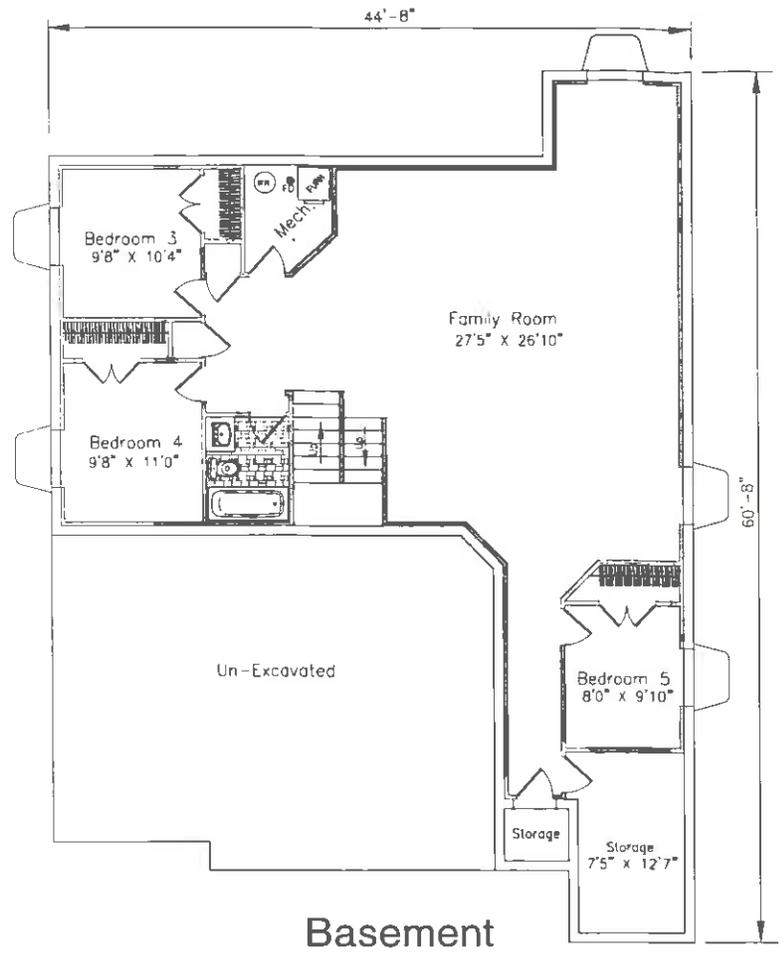
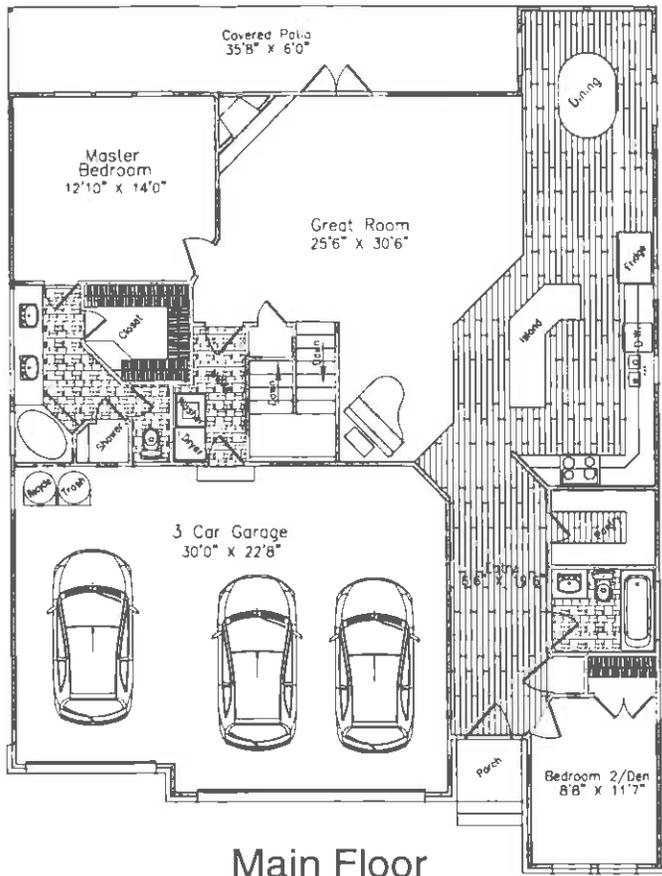
Basement



Cooper Floor Plan

Main Floor Area 1,590 sq.ft.
 Basement Floor Area 1,510 sq.ft.





Falcon Floor Plan

Main Floor Area 1,543 sq.ft.
Basement Floor Area 1,513 sq.ft.

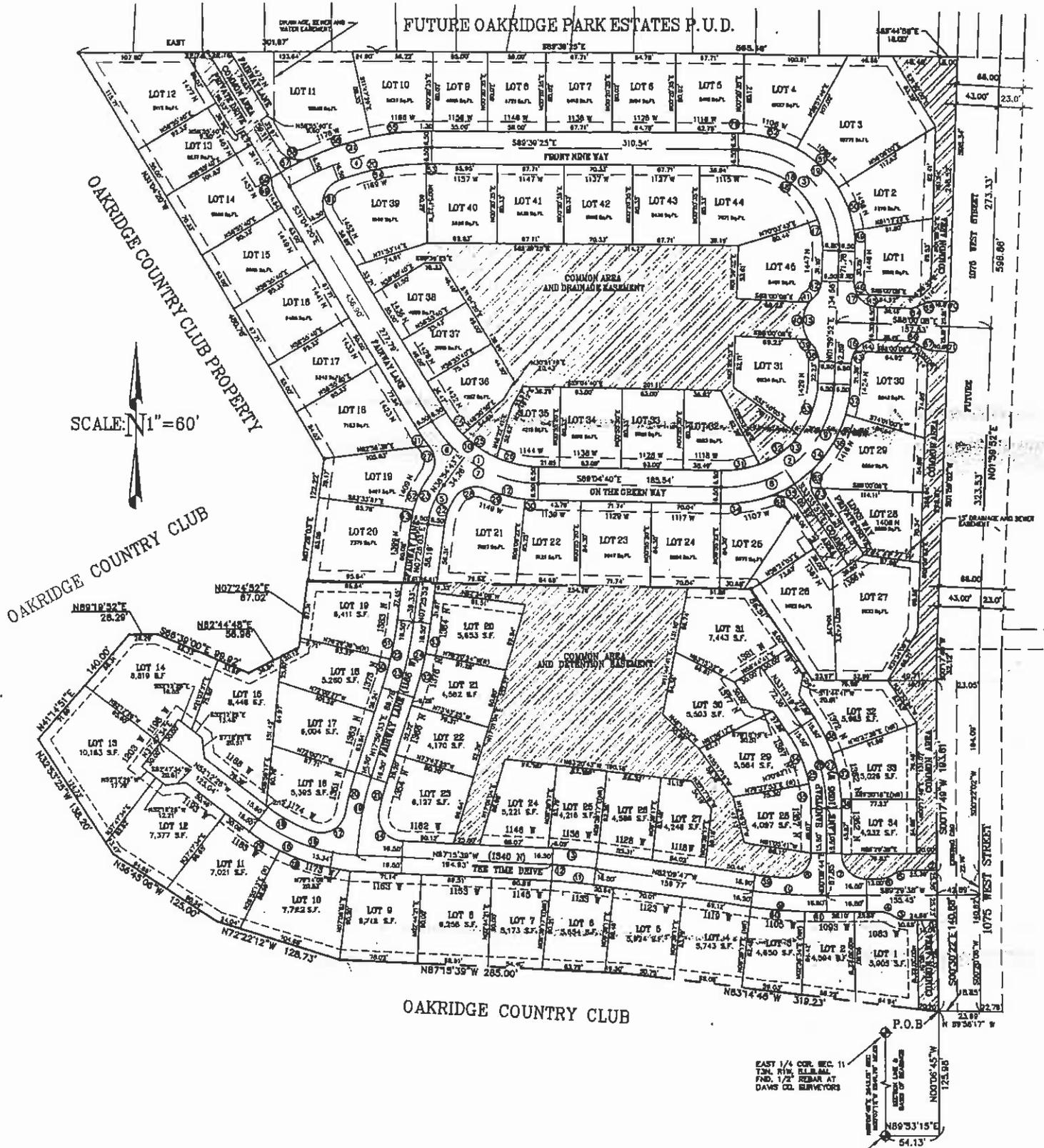
Exhibit D-3

**Balling
Engineering**

The Fairways of Oakridge P.U.D.

1400 North 1075 West, Farmington

FUTURE OAKRIDGE PARK ESTATES P.U.D.



SCALE: 1" = 60'

OAKRIDGE COUNTRY CLUB

EAST 1/4 COR. SEC. 11
T34N. R14W. E1/4E. 1/4M.
FND. 1/2" REBAR AT
DANS CO. SURVEYORS

P.O.B.
N89°33'15"E
54.13'
N89°33'15"E
172.72'
N89°33'15"E
54.13'



Cory Ritz, Farmington City Council Member

Aug 2, 2013

Cory,

I went to the planning commission public hearing last evening. My first time in the new city building. A few observations:

1. The paintings + photos in the council chambers are beautiful.
2. The sound system absolutely SUCKS! Could hardly understand what was being said. I hear pretty well. Can only imagine what people with hearing aids go through. Too much echo? The sound just disappears into those high ceilings. Sit down in the audience seats - you will understand what I mean. The commission/council members need those small face mikes like performers ~~to~~ wear. Unless they talk directly into the microphone, one cannot hear much of anything except noise + mumbling. Went home with a headache from the experience. Big difference from the old council chambers.
3. Need a curtain or screen system for the large window behind the rostrum. Could hardly see the commission members for the glare, and the overhead screen was also hard to see because of the glare.
4. Just my personal take - the rostrum is so high, I felt like I was in a courtroom instead of council room. Very intimidating to most people - not good for community/council relations.

The old council chamber was comfortable, one could see + hear well and for me, made the council seem more approachable, because their seating arrangement was much lower, and closer to the level of their constituents.

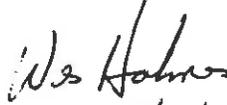
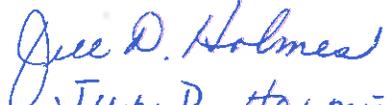
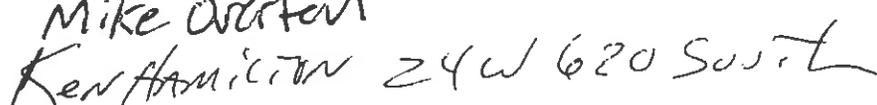
Had to say something! Best Regards!

Darrell Lake

Petition to the Farmington City Planning Commission, City Council, Mayor and Staff by the residents that live along or about 620 South/ Continental Drive:

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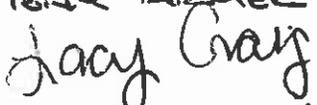
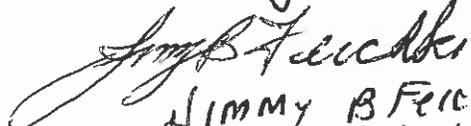
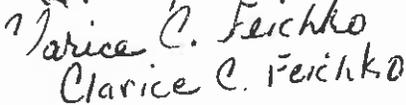
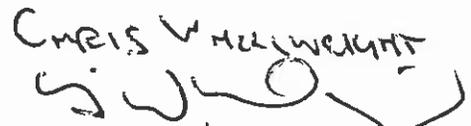
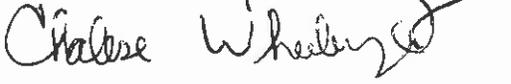
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	39 W 620 S	5/28/2013
WES HOLMES	FARMINGTON, UT 84025	
	39 W. 620 So.	5/28/13
JILL D. HOLMES	Farmington, Utah	
	59 W. 620 S.	5/28/13
Ali Overton	Farmington, UT 84025	
))	5-28-13
Mike Overton		
	24 W 620 South	5/28/13
Ken Hamilton		
	24 W 620 South	5/28/13
Jan Hamilton		

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	38 W 620 S FARMINGTON	5-28-13
TONY ARMER		
	38 W 620 S FARMINGTON UT 84025	5-28-13
LUCY GRAY		
	36 E 620 S. FARMINGTON UT 84025	5-28-13
JIMMY B. FEICHKO		
	36 E. 620 South Farmington, Utah 84025	5-28-13
CLARICE C. FEICHKO		
	54 E. 620 S. FARMINGTON, UT	5/28/13
CHRIS WHEELWRIGHT		
	" " " "	5/28/13
CHAISE WHEELWRIGHT		

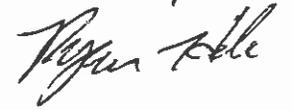
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Kim Farr 82 E. Continental Dr. 5/29/13

 Douglas Farr 82 E CONTINENTAL DR. 5/29/13

Ryan Hale  92 E. 550 S. 5/29/13

Claudia Hale  92 E. 550 S. 5/29/13

Jennie McCoy  116 E. 550 S. 5/29/13

 ~~~~ 116 E. 550 S. 5/29/13

Chelsea Odham  580 S. 150 E. 5/29/13

 Jeff Morrill 150 E 550 S. 5/29/13

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- FRANK GILES 68E 620S F Gil. 5/29/13
- ROSE MARIE GILES 68E 620S Rose Marie Giles 5/29/13
- DARON BERGSTROM 14 WEST 620 S 5/29/13
- DARON BERGSTROM
- Lisa Bergstrom 14 WEST 620 S 5/29/13
- LISA BERGSTROM
- Ryan Cadwallader 23 West 620 S 5/29/13
- Janeese Cadwallader 23 W. 620 S. 5/29/13
- TAUNALEE CADWALLADER

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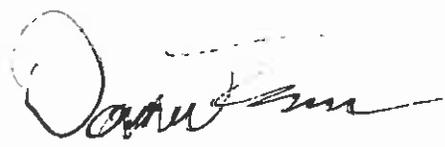
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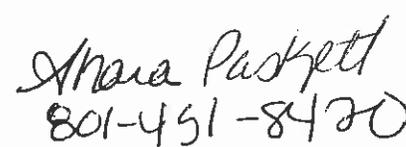
Rebecca Jaton 89-451-2344
Dan Farley 801-451-7667
David Crowner 801-882-9548 (952 580 5)
Pam Crowder 801-668-5669
Megan Hill 801-451-7546
David Knowles 801-451-0646
Diana Knowles 801-451-0646
Ron Poulson 801 718 8541
Audrey Poulson 801-451-8837
Shar Weight 801-451-2139

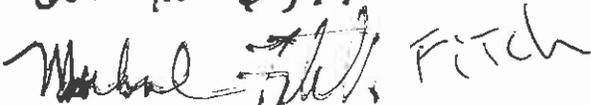
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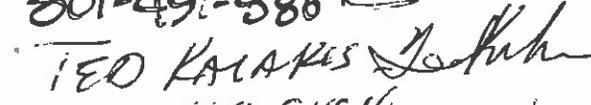
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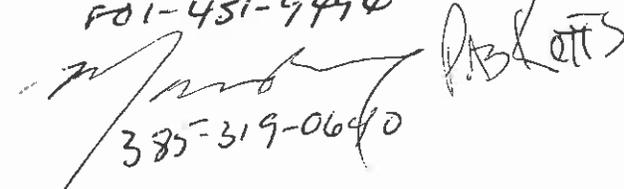
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Daniel Larson
801-910-6577


Anna Puskett
801-451-8470


Michael Fitch
801-451-3862


TED KALAKIS
801-451-9494


P. B. Kott
385-319-0640

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6/25/13  Alan P. Watters

6/25/13  Laraine Flood

6/25/13  Nancy Dace

6/25/13  G. K. Hubbs

6/25/13  Julie Antone

6/25/13  [unclear]

6/25/13  Jean W. Carlson

6/25/13  Jeff H. [unclear]

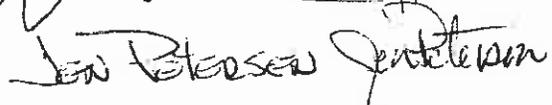
6/25/13  [unclear] Crandall

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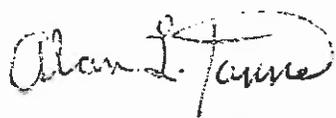
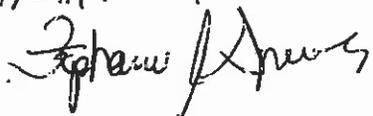
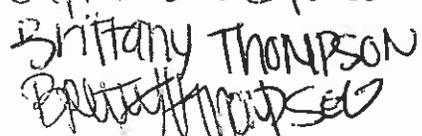
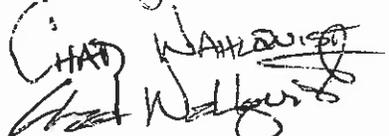
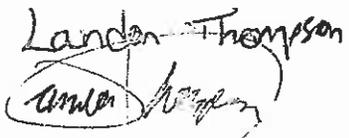
	Mike Hansen	6-24-13	582 S. 50 W.
	Alie Hansen	6-24-13	" "
	Jen Peterson	7-9-13	620 S th

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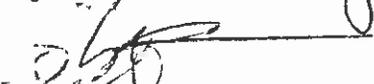
	609 SOUTH 100 EAST	
ALAN L. TANNER	6-21-13	
	79 W 620 S Apt 1	
Stephanie J Spencer	6/24/2013	
	79 W. 620 S. #3	6/24/13
BRITTANY THOMPSON		
	79 W. 620 S. #4	6/24/13
CHAD WADSWORTH		
	79 W 620 S #3	6/24/13
LANDON THOMPSON		

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Betty M. Carroll	Betty M. Carroll	618 S. 150 E.	June 29, 2013
Mary T. Carroll	GARY T. CARROLL	618 S. 150 E	29 June 2013
	D. E. Brennan	497 S. 150 E	" " "
Karen Clark	Karen Clark	130 E. 650 So.	29 June 2013
Brent Clark	Brent Clark	130 E. 650 So.	29 JUN 2013
David V. Meadows	David V. Meadows	120 E. 650 So.	29 June 2013
Maria Trusty	MARIE Zamora	113 E 650 S	June 2013
Teresa Trusty	Teresa Trusty	626 So 100 E	June 29 2013
	Son Stoneman	12 E 620 S	July 6, 2013
	Kelli Stoneman	12 E. 620 S	July 10, 2013

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<u>Sign</u>	<u>Print</u>	<u>Address</u>	<u>Date</u>
Lynni Fern	Lynni Vernon	410 S. 200 E	6/27/13
Kimberly Farley	Farley	77E 620 S Farmington UT 84025	6-27-13
John Lyddy	Lisa Hyatt	670 S. 200 E	6/27/13
Kim Taus	Kim Taus DEP. PM RETIRED	188 E. 700 S.	6/27/13
Bill Oakes	Beth Parker	188 E. 700 S.	6/27/13
Sandra Herrera	Sandra Herrera	171 E 200 S	6-27-13
Janna Tolman	Janna Tolman	56 E. 700 S.	6-27-13
C. Hyatt		676 So 100 E	6-27-13
Bill Henderson		540 S. 200 E. Farmington	6-27-13