SUPPLEMENTAL COMMENTS ON OPTIONS FROM J. DWYER
3.31.14

Bastrop Alt Supplies Considerations

Ingram Wells (Calvert Bluff and Simsboro)

Benefits	Risks
Know initial quality and yield potential of the two zone (Calvert Bluff and Simsboro) at the site are known.	Chloride in the Simsboro well exceeds Texas Drinking Water standard, while TDS and pH are near the maximum contaminant level for these parameters. Water from the Simsboro well will likely exceed these three DW standards within a few years of operation, requiring blending from the onsite Calvert Bluff well or some other source before delivering to customers. The reliability of this source is, therefore, tied to the reliability of the other City sources.
Site is relatively close to the City's existing distribution system, reducing the cost to integrate the supply into the system.	The wells are not permitted by the Lost Pines GCD.
	Supply is limited due to the small site. Additional water will likely be need within the next 30 years.

XS Ranch Simsboro Wells

Benefits	Risks
Initial quality and yield potential of the Simsboro aquifer is only defined at a location near proposed well 3 and 4. The other half of the potential supply is not characterized.	The wells are not permitted by the Lost Pines GCD.
Site is only moderately close to the City's existing distribution system, requiring costly conveyance infrastructure.	Even though the entire supply available from this option will likely not be needed for many decades, the owners have indicated a desire to sell or reserve this supply as quickly as possible and may not be willing to partition the source.
The supply would likely meet Bastrop's needs for the next 50 years.	

Fisherman's Park Alluvial Wells

Benefits	Risks
Water quality and yield are knows based on many years of operation.	The wells are permitted by Lost Pine GCD.
With the exception of the need for filters at the Willow Street WTP, the supply reliably meets Texas Drinking Water standards.	The source is vulnerable to reduction of flows in the adjacent Colorado River. The reduction could be due to drought, curtailment of downstream irrigators, or diversion of treated wastewater dischargers to reuse by the City of Austin.

SUPPLEMENTAL COMMENTS ON OPTIONS FROM J. DWYER
3.31.14

With the exception of the need for filters at the Willow Street WTP, no additional infrastructure is required to continue to use this source.	Bastrop demands will exceed the current supply in the next few years.

Bob Bryant Park Alluvial Well and Simsboro Well

Benefits	Risks
Water quality and yield are knows based on many years of operation.	The wells are permitted by Lost Pine GCD.
The supply reliably meets Texas Drinking Water standards.	The alluvial well is vulnerable to reduction of flows in the adjacent Colorado River. The reduction could be due to drought, curtailment of downstream irrigators, or diversion of treated wastewater dischargers to reuse by the City of Austin.
With the possible exception of the need a filter on the alluvial well, no additional infrastructure is required to continue to use this source.	TDS in the Simsboro is approaching the Texas Drinking Water standard and is currently blended with water from the alluvial well before delivering to customers. The reliability of the Simsboro well is, therefore, tied to the reliability of the other City sources.
	Bastrop demands will exceed the current supply in the next few years.

XS RANCH

RECEIVED 3-25-14

COAST RANGE
INVESTMENTS

RE: Water Rights Sale
XS Water Company LLC
City of Bastrop

March 25, 2014

Mr. Talbot,

After careful consideration XS Ranch is willing to discuss the following terms for sale of water rights to the City of Bastrop.

1. Parties: XS Water Company LLC (XS) and City of Bastrop (City)

2. XS will sell to City the Groundwater Rights owned by XS over the XS Ranch—the groundwater rights are in the form of a Lease/Conveyance of Rights between XS and the owner of XS Ranch

3. Price and Schedule:

   Initial Purchase:
   - May 1, 2014 City Purchases 3000 acre feet of water rights from XS for $2,000,000 ($667/acft).

   Additional Water:
   - On or before October 28, 2014 the City and XS Ranch will use best efforts to amend the XS Ranch Development Agreement. The amendment would call for increasing total dwelling units by 3000. Upon agreement for the increase in density, XS Ranch will convey an additional 3000 acft to the City for price of $1,000,000. If the City and XS Ranch are unable to agree to a Development Agreement Amendment, XS Ranch will continue to retain the remaining 3000 acre feet.

4. Groundwater Lease Rights will include rights for City to obtain, at no cost, permanent easement right for the facilities needed to extract, produce, store and transport the water to City's places of use. Location of easement areas to be mutually agreed upon.

5. This offer expires April 10, 2014

Thank you for the City's consideration of this proposal and we look forward to a continued partnership with the City.

Regards,

James P. Foster
Managing Partner
Coast Range Investments

300 West 6th Street, Suite 1810 Austin, Texas 78701 p: 512-527-3451 f: 512-527-3463 www.cr-invests.com

XS RANCH
CITY OF BASTROP
Water Demand Projections

YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	XS RANCH ACRE FT.	TOTAL ACRE FT.	NEED-XS ACRE FT.	XS RANCH OPER. COST	TOTAL	PV Factor	PV
2014	1,739	2,914	6,000	8,914	-7,175				
2015	1,826	2,914	6,000	8,914	-7,088			0.9709	
2016	1,907	1,887	6,000	7,887	20	$3,714	$3,714	0.9426	$3,500.93
2017	1,987	1,887	6,000	7,887	100	$18,571	$18,571	0.9151	$16,993.96
2018	2,068	1,887	6,000	7,887	181	$33,613	$33,613	0.8885	$29,864.96
2019	2,148	1,887	6,000	7,887	261	$48,469	$48,469	0.8625	$41,804.74
2020	2,229	1,887	6,000	7,887	342	$63,511	$63,511	0.8375	$53,190.84
2021	2,294	1,887	6,000	7,887	407	$75,582	$75,582	0.8131	$61,456.00
2022	2,360	1,887	6,000	7,887	473	$87,839	$87,839	0.7894	$69,340.06
2023	2,425	1,887	6,000	7,887	538	$99,910	$99,910	0.7664	$76,570.89
2024	2,491	1,887	6,000	7,887	604	$112,166	$112,166	0.7441	$83,463.04

YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	XS Ranch ACRE FT.	TOTAL ACRE FT.	NEED ACRE FT.	XS RANCH OPER. COST	TOTAL	PV Factor	PV
2025	2,556	1,887	6,000	7,887	669	$124,237	$124,237	0.7224	$89,749.04
									$525,934.45
2026	2,630	1,887	6,000	7,887	743	$137,980	$137,980	0.7014	$96,778.86
2027	2,704	1,887	6,000	7,887	817	$133,089	$133,089	0.6810	$90,633.81
2028	2,777	1,887	6,000	7,887	890	$165,278	$165,278	0.6611	$109,265.51
2029	2,851	1,887	6,000	7,887	964	$179,021	$179,021	0.6419	$114,913.31
2030	2,925	1,887	6,000	7,887	1,038	$192,763	$192,763	0.6232	$120,129.79
2031	3,009	1,887	6,000	7,887	1,122	$208,362	$208,362	0.6050	$126,059.09
2032	3,094	1,887	6,000	7,887	1,207	$224,147	$224,147	0.5874	$131,664.03
2033	3,178	1,887	6,000	7,887	1,291	$239,746	$239,746	0.5703	$136,727.40
2034	3,263	1,887	6,000	7,887	1,376	$255,531	$255,531	0.5537	$141,487.77
2035	3,347	1,887	6,000	7,887	1,460	$271,131	$271,131	0.5375	$145,732.78
									$1,739,326.82
2036	3,445	1,887	3,500	5,387	1,558	$289,330	$289,330	0.5219	$151,001.30

YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	XS Ranch ACRE FT.	TOTAL ACRE FT.	NEED ACRE FT.	XS RANCH OPER. COST	TOTAL	PV Factor	PV
2037	3,544	1,887	6,000	7,887	1,657	$307,715	$307,715	0.5067	$155,919.11
2038	3,642	1,887	6,000	7,887	1,755	$325,914	$325,914	0.4919	$160,317.11
2039	3,741	1,887	6,000	7,887	1,854	$344,299	$344,299	0.4776	$164,437.17
2040	3,839	1,887	6,000	7,887	1,952	$362,498	$362,498	0.4637	$168,090.37
2041	3,947	1,887	6,000	7,887	2,060	$382,554	$382,554	0.4502	$172,225.97
2042	4,055	1,887	6,000	7,887	2,168	$402,611	$402,611	0.4371	$175,981.10
2043	4,164	1,887	6,000	7,887	2,277	$422,853	$422,853	0.4243	$179,416.34
2044	4,272	1,887	6,000	7,887	2,385	$442,909	$442,909	0.4120	$182,478.43
2045	4,380	1,887	6,000	7,887	2,493	$462,965	$462,965	0.4000	$185,186.02
									$3,434,379.74
2046	4,511	1,887	6,000	7,887	2,624	$427,450	$427,450		
2047	4,643	1,887	6,000	7,887	2,756	$448,952	$448,952		
2048	4,774	1,887	6,000	7,887	2,887	$470,292	$470,292		

YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	XS Ranch ACRE FT.	TOTAL ACRE FT.	NEED ACRE FT.	XS RANCH OPER. COST	TOTAL	PV Factor	PV
2049	4,906	1,887	6,000	7,887	3,019	$491,795	$491,795		
2050	5,037	1,887	6,000	7,887	3,150	$513,135	$513,135		
2051	5,242	1,887	6,000	7,887	3,355	$546,530	$546,530		
2052	5,446	1,887	6,000	7,887	3,559	$579,761	$579,761		
2053	5,651	1,887	6,000	7,887	3,764	$613,156	$613,156		
2054	5,855	1,887	6,000	7,887	3,968	$646,387	$646,387		
2055	6,060	1,887	6,000	7,887	4,173	$679,782	$679,782		

** No rate increase for electricity, chlorine or LPGWCD.*

***Purchased 6,000 Acre Feet from XS Ranch.*

Reflects 1.5% LCRA rate increase per year or 15% over 10 years.

Electric costs based on 1,500 gpm well pump.

INGRAM/XS RANCH

Ingram / XS RANCH
CITY OF BASTROP
Water Demand Projections

YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	INGRAM ACRE FT.	INGRAM NEED ACRE FT.	XS RANCH ACRE FT.	INGRAM OPERATIONAL COSTS	XS RANCH OPERATIONAL COSTS	TOTAL	PV FACTOR	PV
2014	1,739	2,914		0	0	$0.00	$0.00	$0.00		$0.00
2015	1,826	2,914	1,400	0	3,000	$0.00	$0.00	$0.00		$0.00
2016	1,907	1,887	1,400	20	3,000	$2,932.20	$0.00	$2,932.20	0.9426	$2,763.89
2017	1,987	1,887	1,400	100	3,000	$14,661.00	$0.00	$14,661.00	0.9151	$13,416.28
2018	2,068	1,887	1,400	181	3,000	$26,536.41	$0.00	$26,536.41	0.8885	$23,577.60
2019	2,148	1,887	1,400	261	3,000	$38,265.21	$0.00	$38,265.21	0.8625	$33,003.74
2020	2,229	1,887	1,400	342	3,000	$50,140.62	$0.00	$50,140.62	0.8375	$41,992.77
2021	2,294	1,887	1,400	407	3,000	$59,670.27	$0.00	$59,670.27	0.8131	$48,517.90
2022	2,360	1,887	1,400	473	3,000	$69,346.53	$0.00	$69,346.53	0.7894	$54,742.15
2023	2,425	1,887	1,400	538	3,000	$78,876.18	$0.00	$78,876.18	0.7664	$60,450.70
2024	2,491	1,887	1,400	604	3,000	$88,552.44	$0.00	$88,552.44	0.7441	$65,891.87

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YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	INGRAM ACRE FT.	NEED ACRE FT.	XS RANCH ACRE FT.	INGRAM OPERATIONAL COSTS	XS RANCH OPERATIONAL COSTS	TOTAL	PV FACTOR	PV
2025	2,556	1,887	1,400	669	3,000	$98,082.09	$0.00	$98,082.09	0.7224	$70,854.50
										$415,211.41
2026	2,630	1,887	1,400	743	3,000	$108,931.23	$0.00	$108,931.23	0.7014	$76,404.36
2027	2,704	1,887	1,400	817	3,000	$119,780.37	$0.00	$119,780.37	0.6810	$81,570.43
2028	2,777	1,887	1,400	890	3,000	$130,482.90	$0.00	$130,482.90	0.6611	$86,262.25
2029	2,851	1,887	1,400	964	3,000	$141,332.04	$0.00	$141,332.04	0.6419	$90,721.04
2030	2,925	1,887	1,400	1,038	3,000	$152,181.18	$0.00	$152,181.18	0.6232	$94,839.31
2031	3,009	1,887	1,400	1,122	3,000	$164,496.42	$0.00	$164,496.42	0.6050	$99,520.33
2032	3,094	1,887	1,400	1,207	3,000	$176,958.27	$0.00	$176,958.27	0.5874	$103,945.29
2033	3,178	1,887	1,400	1,291	3,000	$189,273.51	$0.00	$189,273.51	0.5703	$107,942.68
2034	3,263	1,887	1,400	1,376	3,000	$201,735.36	$0.00	$201,735.36	0.5537	$111,700.87

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YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	INGRAM ACRE FT.	NEED ACRE FT.	XS RANCH ACRE FT.	INGRAM OPERATIONAL COSTS	XS RANCH OPERATIONAL COSTS	TOTAL	PV FACTOR	PV
2035	3,347	1,887	1,400	1,400	3,000	$205,254.00	$11,142.36	$216,396.36	0.5375	$116,313.04
										$1,384,431.02
2036	3,445	1,887	1,400	1,400	3,000	$205,254.00	$29,341.55	$234,595.55	0.5219	$122,435.42
2037	3,544	1,887	1,400	1,400	3,000	$205,254.00	$47,726.44	$252,980.44	0.5067	$128,185.19
2038	3,642	1,887	1,400	1,400	3,000	$205,254.00	$65,925.63	$271,179.63	0.4919	$133,393.26
2039	3,741	1,887	1,400	1,400	3,000	$205,254.00	$84,310.52	$289,564.52	0.4776	$138,296.02
2040	3,839	1,887	1,400	1,400	3,000	$205,254.00	$102,509.71	$307,763.71	0.4637	$142,710.03
2041	3,947	1,887	1,400	1,400	3,000	$205,254.00	$122,565.96	$327,819.96	0.4502	$147,584.55
2042	4,055	1,887	1,400	1,400	3,000	$205,254.00	$142,622.21	$347,876.21	0.4371	$152,056.69
2043	4,164	1,887	1,400	1,400	3,000	$205,254.00	$162,864.16	$368,118.16	0.4243	$156,192.54
2044	4,272	1,887	1,400	1,400	3,000	$205,254.00	$182,920.41	$388,174.41	0.4120	$159,927.86

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YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	INGRAM ACRE FT.	NEED ACRE FT.	XS RANCH ACRE FT.	INGRAM OPERATIONAL COSTS	XS RANCH OPERATIONAL COSTS	TOTAL	PV FACTOR	PV
2045	4,380	1,887	1,400	1,400	3,000	$205,254.00	$202,976.66	$408,230.66	0.4000	$163,292.26
										$2,828,504.83
2046	4,511	1,887	1,400	1,400	3,000	$205,254.00	$227,304.14	$432,558.14		
2047	4,643	1,887	1,400	1,400	3,000	$205,254.00	$251,817.34	$457,071.34		
2048	4,774	1,887	1,400	1,400	3,000	$205,254.00	$276,144.82	$481,398.82		
2050	5,037	1,887	1,400	1,400	3,000	$205,254.00	$324,985.50	$530,239.50		
2051	5,242	1,887		1,400	3,000	$205,254.00	$363,055.23	$568,309.23		
2052	5,446	1,887		1,400	3,000	$205,254.00	$400,939.25	$606,193.25		
2053	5,651	1,887		1,400	3,000	$205,254.00	$439,008.98	$644,262.98		
2054	5,855	1,887		1,400	3,000	$205,254.00	$476,893.01	$682,147.01		
2055	6,060	1,887		1,400	3,000	$205,254.00	$514,962.74	$720,216.74		

INGRAM/LCRA/ XS RANCH

Ingram / LCRA/XS RANCH
CITY OF BASTROP
Water Demand Projections

YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	INGRAM ACRE FT.	INGRAM NEED ACRE FT.	LCRA RESERVE ACRE FT.	XS RANCH ACRE FT.	LCRA TAKE ACRE FT.	LCRA WATER RESERVE $75/ACRE FT.	TAKE $151/ACRE FT.	INGRAM OPERATIONAL COSTS	LCRA OPERATIONAL COSTS	XS RANCH OPERATIONAL COSTS	TOTAL	PV FACTOR	PV
2014	1,739	2,914		0	0	0	0	$0	$0	$0.00	$0.00	$0.00	$0		$0
2015	1,826	2,914	1,400	0	1,000	3,000	0	$75,000	$0	$0.00	$0.00	$0.00	$75,000		$0
2016	1,907	1,887	1,400	20	1,000	3,000	0	$75,000	$0	$2,932.20	$0.00	$0.00	$77,932	0.9426	$73,459
2017	1,987	1,887	1,400	100	1,000	3,000	0	$75,000	$0	$14,661.00	$0.00	$0.00	$89,661	0.9151	$82,049
2018	2,068	1,887	1,400	181	1,000	3,000	0	$75,000	$0	$26,536.41	$0.00	$0.00	$101,536	0.8885	$90,215
2019	2,148	1,887	1,400	261	1,000	3,000	0	$75,000	$0	$38,265.21	$0.00	$0.00	$113,265	0.8625	$97,691
2020	2,229	1,887	1,400	342	1,000	3,000	0	$75,000	$0	$50,140.62	$0.00	$0.00	$125,141	0.8375	$104,805
2021	2,294	1,887	1,400	407	1,000	3,000	0	$75,000	$0	$59,670.27	$0.00	$0.00	$134,670	0.8131	$109,500
2022	2,360	1,887	1,400	473	1,000	3,000	0	$75,000	$0	$69,346.53	$0.00	$0.00	$144,347	0.7894	$113,947
2023	2,425	1,887	1,400	538	1,000	3,000	0	$75,000	$0	$78,876.18	$0.00	$0.00	$153,876	0.7664	$117,931
2024	2,491	1,887	1,400	604	1,000	3,000	0	$75,000	$0	$88,552.44	$0.00		$163,552	0.7441	$121,699

YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	INGRAM ACRE FT.	NEED ACRE FT.	LCRA RESERVE ACRE FT.	XS RANCH ACRE FT.	LCRA TAKE ACRE FT.	LCRA WATER RESERVE $86.25/ACRE FT.	TAKE $174/ACRE FT.	INGRAM OPERATIONAL COSTS	LCRA OPERATIONAL COSTS	XS RANCH OPERATIONAL COSTS	TOTAL	PV FACTOR	PV
2025	2,556	1,887	1,400	669	1,000	3,000	0	$86,250	$0	$98,082.09	$0.00	$0.00	$184,332	0.7224	$133,162
															$1,044,458
2026	2,630	1,887	1,400	743	1,000	3,000	0	$86,250	$0	$108,931.23	$0.00	$0.00	$195,181	0.7014	$136,900
2027	2,704	1,887	1,400	817	1,000	3,000	0	$86,250	$0	$119,780.37	$0.00	$0.00	$206,030	0.6810	$140,307
2028	2,777	1,887	1,400	890	1,000	3,000	0	$86,250	$0	$130,482.90	$0.00	$0.00	$216,733	0.6611	$143,282
2029	2,851	1,887	1,400	964	1,000	3,000	0	$86,250	$0	$141,332.04	$0.00	$0.00	$227,582	0.6419	$146,085
2030	2,925	1,887	1,400	1,038	1,000	3,000	0	$86,250	$0	$152,181.18	$0.00	$0.00	$238,431	0.6232	$148,590
2031	3,009	1,887	1,400	1,122	1,000	3,000	0	$86,250	$0	$164,496.42	$0.00	$0.00	$250,746	0.6050	$151,702
2032	3,094	1,887	1,400	1,207	1,000	3,000	0	$86,250	$0	$176,958.27	$0.00	$0.00	$263,208	0.5874	$154,609
2033	3,178	1,887	1,400	1,291	1,000	3,000	0	$86,250	$0	$189,273.51	$0.00	$0.00	$275,524	0.5703	$157,131
2034	3,263	1,887	1,400	1,376	1,000	3,000	0	$86,250	$0	$201,735.36	$0.00	$0.00	$287,985	0.5537	$159,457

YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	INGRAM ACRE FT.	NEED ACRE FT.	LCRA RESERVE ACRE FT.	XS RANCH ACRE FT.	XS TAKE ACRE FT.	LCRA WATER RESERVE $99.19/ACRE FT.	TAKE $200/ACRE FT.	INGRAM OPERATIONAL COSTS	LCRA OPERATIONAL COSTS	XS RANCH OPERATIONAL COSTS	TOTAL	PV FACTOR	PV
2035	3,347	1,887	1,400	1,400	1,000	3,000	60	$99,190	$0	$205,254.00	$4,105.08	$11,142.36	$308,549	0.5375	$165,845
															$2,548,366
2036	3,445	1,887	1,400	1,400	1,000	3,000	158	$99,190	$0	$205,254.00	$10,810.04	$29,341.55	$315,254	0.5219	$164,531
2037	3,544	1,887	1,400	1,400	1,000	3,000	257	$99,190	$0	$205,254.00	$17,583.43	$47,726.44	$322,027	0.5067	$163,171
2038	3,642	1,887	1,400	1,400	1,000	3,000	355	$99,190	$0	$205,254.00	$24,288.39	$65,925.63	$328,732	0.4919	$161,703
2039	3,741	1,887	1,400	1,400	1,000	3,000	454	$99,190	$0	$205,254.00	$31,061.77	$84,310.52	$335,506	0.4776	$160,238
2040	3,839	1,887	1,400	1,400	1,000	3,000	552	$99,190	$0	$205,254.00	$37,766.74	$102,509.71	$342,211	0.4637	$158,683
2041	3,947	1,887	1,400	1,400	1,000	3,000	660	$99,190	$0	$205,254.00	$45,155.88	$122,565.96	$349,600	0.4502	$157,390
2042	4,055	1,887	1,400	1,400	1,000	3,000	768	$99,190	$0	$205,254.00	$52,545.02	$142,622.21	$356,989	0.4371	$156,040
2043	4,164	1,887	1,400	1,400	1,000	3,000	877	$99,190	$0	$205,254.00	$60,002.59	$162,864.16	$364,447	0.4243	$154,635
2044	4,272	1,887	1,400	1,400	1,000	3,000	985	$99,190	$0	$205,254.00	$67,391.73	$182,920.41	$371,836	0.4120	$153,196

YEAR	DEMAND ACRE FT.	EXISTING ACRE FT.	INGRAM ACRE FT.	NEED ACRE FT.	LCRA RESERVE ACRE FT.	XS RANCH ACRE FT.	XS TAKE ACRE FT.	LCRA WATER RESERVE $114.07/ACRE	TAKE $229.65/ACRE FT.	INGRAM OPERATIONAL COSTS	LCRA OPERATIONAL COSTS	XS RANCH OPERATIONAL COSTS	TOTAL	PV FACTOR	PV
2045	4,380	1,887	1,400	1,400	1,000	3,000	1,093	$114,070	$0	$205,254.00	$74,780.87	$202,976.66	$394,105	0.4000	$157,642
															$4,135,596
2046	4,511	1,887	1,400	1,400	1,000	3,000	1,224	$114,070	$0	$205,254.00	$83,743.63	$227,304.14	$403,068		
2047	4,643	1,887	1,400	1,400	1,000	3,000	1,356	$114,070	$0	$205,254.00	$92,774.81	$251,817.34	$412,099		
2048	4,774	1,887	1,400	1,400	1,000	3,000	1,487	$114,070	$0	$205,254.00	$101,737.57	$276,144.82	$421,062		
2050	5,037	1,887	1,400	1,400	1,000	3,000	1,750	$114,070	$0	$205,254.00	$119,731.50	$324,985.50	$439,056		
2051	5,242	1,887		1,400	1,000	3,000	1,955	$114,070	$0	$205,254.00	$133,757.19	$363,055.23	$453,081		
2052	5,446	1,887		1,400	1,000	3,000	2,159	$114,070	$0	$205,254.00	$147,714.46	$400,939.25	$261,784		
2053	5,651	1,887		1,400	1,000	3,000	2,364	$114,070	$0	$205,254.00	$161,740.15	$439,008.98	$275,810		
2054	5,855	1,887		1,400	1,000	3,000	2,568	$0	$0	$205,254.00	$175,697.42	$476,893.01	$175,697		
2055	6,060	1,887		1,400	1,000	3,000	2,773	$0	$0	$205,254.00	$189,723.11	$514,962.74	$189,723		

Reflects 1.5% LCRA rate increase per year or 15% over 10 years.

MISCELLANEOUS

CITY OF BASTROP

WATER SUPPLY PRESENTATION

APRIL 2, 2014

The City of Bastrop contracted with CH2MHILL to develop a Water Demand Projections Report. The final report was submitted on March 10, 2014 and accepted by the City Council. In addition, the City Council chose Scenario Two, Additional Conservation as the city's water demand model for the next 40 years. The conservation scenario decreases per capita use by 1 percent per year until reaching a goal of 140 gallons per capita per day, a voluntary target developed by the Texas Water Development Board's Water Conservation Task Force in 2004 (TWDB 2004).

An important part of this scenario was based on conservation. Water use efficiency is an increasingly important component of municipal water supply portfolios. Efficient water use can reduce operating costs associated with treatment and transmission and can often defer facility and water supply expansions.

The State currently requires conservation and drought management plans and is expected to consider legislation establishing water loss standards during the upcoming legislative session. The City of Bastrop currently maintains and enforces their existing conservation and drought management plans. Over the next several months, the plans will be reviewed and tightened to encourage water conservation.

City of Bastrop

Water Quality Analysis

TCEQ Contaminant	*MCL	XS RANCH Simsboro	INGRAM		LCRA Simsboro	
			Simsboro	Calvert Bluff		
					No. 3	No. 4
Nitrate	10 mg/l	< 0.1	< 0.1	< 0.1	< 0.100	< 0.100
Nitrite	1 mg/l	< 0.152	< 0.152	< 0.152	< 0.100	< 0.100
Arsenic	10 ug/l	0.645	< 2	< 2		
Fluoride	4.0 mg/l	< 0.500	0.696	< 0.500		
Aluminum	0.2 mg/l	0.083	0.0131	0.210		
Copper	1.0 mg/l	0.0208	0.00132	< 0.001		
Iron	0.3 mg/l	0.182	< 0.050	0.211	0.0987	0.180
Manganese	0.05 mg/l	0.035	0.0146	0.0162	0.0135	0.0148
Zinc	5.0 mg/l	0.0507	< 0.005	0.0156		
Total Dissolved Solids	1,000 mg/l	256	950	750	344	341
Sulfate	300 mg/l	29.3	< 1.50	148	36.5	42.1
Chloride	300 mg/l	20.4	260	41.8	27.3	27
pH	≥ 7.0	7.4	8.2	8.0	8.61	8.13
Temperature		81				

04/14

**Maximum Contaminant Limit*

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PUBLIC WELL COMPLETION DATA CHECKLIST FOR INTERIM APPROVAL

Texas Commission on Environmental Quality
Water Supply Division
Util. Technical Review Team MC-159
P.O. Box 13087, Austin, Texas 78711-3087

Public Water System I.D. No.: _____
TCEQ Log. No.: _____
Owner's Well Id No. or Name.: _____

Any well proposed as a source of water for a public water supply must have plans approved for construction by the TCEQ. Plans are reviewed for compliance with Rules and Regulations for Public Water Systems Title 30 TAC Chapter 290.38-290.49. After the well is drilled, the well completion data listed below must be submitted for TCEQ evaluation. Based on this submitted data, interim approval may be given for use of the well. Please include the TCEQ Log No. and owner's well name when submitting well completion information.

(Small print references in parentheses are Rules and Regulations for Public Water Systems Title 30 TAC Chapter 290.38-290.49)

1. ☐ Copies of ordinance or a recorded deed and map showing ownership and/or sanitary control easements as filed at the county courthouse (bearing the county clerk's stamp), covering all areas within 150 feet of the well owned by the system that will convey to others and neighboring tract not owned by the system (for a sample easement see 30 TAC 290.47(c), or contact the TCEQ Austin office or a Regional office. (Section 290.41(c)(1)(F) of the rules.)
2. ☐ Construction data on the completed well, including:
   - ☐ Casing size, bore hole diameter (at least 3-in wider than casing OD), total well depth, casing material (e.g. steel, PVC-SDR17), casing length, and cementing depth and method (one of the methods in AWWA Standard A-100-(latest rev'n), Appendix. C, *excluding* the dump bailer and tremie methods);
   - ☐ Driller's geologic log of strata penetrated during drilling of the well;
   - ☐ Copy of the official State of Texas Well Report filled out by the water well driller (some of the preceding data is included on the Water Well Report form. (Section 290.41(c)(3)(A),(B),(C) & (G) of the rules.)
   - ☐ Cementing certificate (Railroad Commission or company format). (Section 290.41(c)(3)(A))
3. ☐ A U.S. Geological Survey 7.5-minute topographic quadrangle map (include quadrangle name and number), or a legible copy, with "cross-hairs" showing the location of the completed well. (Section 290.41(c)(3)(A) of the rules.) ACCURACY: All locations collected shall maintain a minimum level of accuracy of at least 25 meters (82 feet). TCEQ OPP 8.11.02)
4. ☐ Record of a 36 hour pump test on the well showing stable production at the well's rated capacity (Section 290.41(c)(3)(A) & (G) of the rules). Include the final well pump capacity in gpm and feet, t.d.h.
5. ☐ Three bacteriological analysis reports showing raw well water to be free of coliform bacterial contamination; reports must be for samples of raw (untreated) water from the disinfected well, collected on three successive days, and submitted to a laboratory certified or accredited by TCEQ. (Section 290.41(c)(3)(A) & (F) of the rules.)
6. ☐ Chemical analysis reports for well water samples showing the water to be of acceptable quality for at least, the most problematic contaminants listed below (Section 290.41(c)(3)(A) & (G) of the rules, and Section 290.104 and 290.105 of Drinking Water Standards). Reports must come from a certified or accredited laboratory for interim use of the well. Maximum contaminant level (MCL) and secondary contaminant level (SCL) units are in mg/l (except arsenic).

MCL	PRIMARY	SCL	SECONDARY	SCL	SECONDARY	SCL	SECONDARY
10 (as N)	Nitrate	0.2	Aluminum	5.0	Zinc	300	Sulfate
1 (as N)	Nitrite	1.0	Copper	1,000	Total Dissolved Solids	300	Chloride
10 µg/l	Arsenic	0.3	Iron	2.0	Fluoride	≥7.0	pH
4.0	Fluoride	0.05	Manganese				

15 Gross alpha (pCi/liter)*
5 Radium-226/228 (pCi/liter)*
50 Beta particle (pCi/liter)*
30 Uranium (µg/liter)* (WHERE: pCi/liter=pico curies per liter, µg/liter=micrograms per liter)

Radionuclide water analyses required only in selected counties listed on the back of this checklist. For more guidance see "How to Conduct Radionuclide Testing for Well Completion Interim Approval"

7. ☐ By checking this box, submitter agrees to contact the Drinking Water Quality Team at 512/239-4691 within 120 days of receiving interim approval to schedule final approval sampling. These will be collected by TCEQ contractors, analyzed by a certified lab, and paid for by the Public Water Supply.
8. ☐ By checking this box, submitter acknowledges that Public Water Supply systems are subject to applicable Texas Administrative Code 30 Chapters 290, 291, 292 and 293.

List of Counties where Radionuclide Testing is Required

Please be aware when you review your radiological data that if the report has gross alpha over 15 pCi/L and uraniums are not reported, you will have to resample or reanalyze and resubmit radionuclide results. If you see gross alpha plus radium-228 over 5 pCi/L, and don't have radium-226, you will have to resample or reanalyze and resubmit complete results. For more information go to following website.

COUNTY	STATE CODE#
Atascosa	007
Bexar	015
Bosque	018
Brazoria	020
Brewster	022
Burnet	027
Concho	048
Culberson	055
Dallam	056
Erath	072
Fort Bend	079
Frio	082
Gillespie	086
Gray	090
Grayson	091
Harris	101
Hudspeth	115
Irion	118
Jeff Davis	122
Kendall	130
Kerr	133
Liberty	146
Llano	150
Lubbock	152

Continued	
McCulloch	154
Mason	160
Matagorda	161
Medina	163
Montgomery	170
Moore	171
Parker	184
Pecos	186
Polk	187
Presidio	189
Refugio	196
San Jacinto	204
San Saba	206
Tarrant	220
Tyler	229
Upton	231
Val Verde	233
Victoria	235
Walker	236
Washington	239
Wichita	243
Zavala	254

CITY OF BASTROP
Cost Estimate

XS Ranch

WELL

1,500 gpm Simsboro Water Well	$540,000
Line Shaft Turbine Pump, Motor and Discharge Head	$265,000
Subtotal Well	$805,000

PLANT

500,000 GALLON Ground Storage Tank	$ 275,000
Master Meter Piping	$ 90,000
Pump Building	$100,000
Chlorination System	$ 25,000
Fence	$ 35,000
Pressure Tank	$ 80,000
Booster Pumps / Piping	$ 125,000
SCADA	$ 75,000
Electrical Service	$ 100,000
400 AMP Manual Transfer Switch	$ 30,000
Turner Controls Backup System	$ 20,000
Yard Piping	$ 100,000
Seeding / Hydromulch	$ 5,000

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Plant Signs	$ 2,500
Access Roadway Improvements (Estimated)	$ 5,000
Subtotal Plant	$1,067,500

TRANSMISSION LINE

12,400 feet or 1.5 miles of 18" PVC C905, DR-21 (3,750 gpm or 6,050 acre feet / year) @$65.00	$806,000
600 feet of 18" uncased bore @ $100.00	$ 60,000
200 feet of 22" cased bore @ $220.00	$ 44,000
150 feet of 24" casing by bore @ $275.00	$ 41,250
11 Gate Valves @ $4,000	$ 44,000
4 Fire Hydrants @ $6,000	$ 24,000
2 Tie-Ins @ $3,500	$ 7,000
Subtotal Line	$1,026,250

SUMMARY

Well / Pump / Motor	$ 805,000
Water Plant	$1,067,500
Transmission Line	$ 1,026,250
Subtotal	$2,898,750
Engineering / Surveying	$ 350,000
Cont. 15%	$ 435,250
Engineering	$ 100,000
TOTAL	**$3,784,000**

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NOTES:

1. No land included. Land is leased from XS Ranch.
2. Assumes no treatment / filtration.
3. Assume no environmental concerns.
4. Routing of the transmission line (along SH 95) was assumed for uncased and cased bored crossings.
5. This estimate only includes the first (1) of four (4) wells.
6. Assumes usage of existing 12 inch line from Old McDade Road to Mesquite St. 12 inch line will move 1,800 gpm, (2.6 MGD or 2,900 acre ft. per year) at 5 ft/sec.
7. Wells and all infrastructure are owned by City of Bastrop.
8. City of Bastrop responsible for Lost pines Groundwater District permits.

3/27/14

CITY OF BASTROP
COST ESTIMATE

INGRAM WELL

WELLS

1,000 gpm Simsboro well		$ 900,000
300 gpm Calvert Bluff well		$ 600,000
	Subtotal Wells	$1,500,000

PLANT

SCADA		$ 30,000
Master Meter Piping		$ 40,000
Fencing		$ 30,000
Electrical		$ 30,000
Chlorine Injection/booster pump		$ 30,000
Loop 150 Tank Yard Tie-In		$ 50,000
	Subtotal Plant	$ 210,000

TRANSMISSION LINE

6,200 feet of 12" Line @ $50/lf		$ 310,000
450 feet of bored/cased @ $200/lf		$ 90,000
5-12" valves @ $2,000		$ 10,000
	Subtotal Transmission Line	$ 410,000

SUMMARY

Wells/Pumps/Motors		$1,500,000
Plant		$ 210,000
Transmission Line 12"		$ 410,000
	Subtotal	$2,120,000
	Engineering/Surveying/Hydrologist	$ 350,000
	Cont.	$ 130,000
	TOTAL	**$2,600,000**

The increase of costs from 12" to 18" transmission line with associated engineering and miscellaneous costs will add $500,000 to the TOTAL cost.

TOTAL COST with 18" Line $3,100,000

NOTES:

1. **No land included. Land leased from Ingram.**
2. **Assumes no treatment/filtration.**
3. **Assumes no environmental or toad concerns.**
4. **Routing of the transmission line (along SH 21) was assumed for cased crossings.**
5. **Wells and all infrastructure are owned by the City of Bastrop.**
6. **City of Bastrop responsible for Lost Pines Groundwater District permit.**

CITY OF BASTROP
Cost Estimate

LCRA

WELL

Wells / motors / pumps to be constructed by LCRA on its property. LCRA to secure all Lost Pines Groundwater District permits.

PLANT

500,000 GALLON Ground Storage Tank	$ 275,000
Pump Building	$100,000
Chlorination System	$ 25,000
Fence	$ 35,000
Pressure Tank	$ 80,000
Booster Pumps / Piping	$ 125,000
SCADA	$ 75,000
Electrical Service	$ 100,000
400 AMP Manual Transfer Switch	$ 30,000
Turner Controls Backup	$ 20,000
Yard Piping	$ 100,000
Seeding / Hydromulch	$ 5,000

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Plant Signs	$ 2,500
Access Roading Improvements (Estimated)	$ 5,000
Subtotal Plant	$ 977,500

TRANSMISSION LINE

4.22 miles or 22,300 feet of 18" PVC C-905, DR-21 (3,750 gpm or 6,050 acre feet/year) @$65.00	$1,449,500
800 feet of 18" uncased / bored @ $100.00	$ 80,000
500 feet of 22" cased / bored @ $220.00	$ 110,000
14 Gate Valves @ $4,000	$ 56,000
7 Fire Hydrants @ $6,000	$ 42,000
Tie-Ins-LCRA & Loop 150 Tank Yard @ $70,000	$ 70,000
Subtotal Pipeline	$1,807,500

SUMMARY

Wells -- No Cost Upfront	--LCRA--
Water Plant	$ 977,500
Transmission Line	$1,807,500
Subtotal	$2,785,000
Engineering / Surveying	$ 389,000
Cont. 15%	$ 417,000
TOTAL	**$3,591,000**

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NOTES:

1. No land included-Plant located on LCRA property at gate to plant.
2. Assumes no treatment / filtration.
3. Assumed no environmental concerns-Houston Toad could be an issue.
4. Routing of the transmission line was assumed for unbored and bored crossings along SH 21.
5. LCRA to tie well production line into ground storage tank.
6. City of Bastrop ownership starts at ground storage tank, LCRA responsible for wells, master meters and piping to ground storage.

10/8/13

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CITY OF BASTROP
COST ESTIMATE

TRANSMISSION LINE
WITHIN SIM GIDEON PLANT

TRANSMISSION LINE

7,000 LF OF 18" PVC, C-905, DR-21 at $65.00/lf		$455,000
300 LF of 22" bore/uncased @ $220/lf		$ 66,000
Master Meter Run		$ 30,000
5- Gate Valves @ $6,000/each		$ 30,000
Tie-In @ Plant Site at LCRA		$ 7,500
SCADA (Well and Plant)		$ 50,000
	Subtotal	$638,500
	15% Cont.	$ 95,800
	15% Engineering	$ 95,800
	TOTAL	$830,100

Estimate length from Plant (Sim Gideon) well LCRA-SB-4 to Water Plant (City)

March 15, 2014
GK

Gene Kruppa

From: Lower Colorado River Authority <web.editor@lcra.org>
Sent: Friday, March 28, 2014 6:07 PM
To: gene@befcoengineering.com
Subject: LCRA revises proposed water rates based on customer, public feedback

E-newsletter on Proposed Water Rates March 28, 2014

LCRA revises proposed water rates based on customer, public feedback

LCRA staff has revised an earlier proposal to change the rates LCRA charges firm and interruptible customers for raw water.

In January, LCRA staff presented its initial rate proposal to the LCRA Board of Directors. Since then, members of the LCRA staff have spent many hours talking with customers and the public throughout the basin to collect feedback. LCRA staff has revised its preliminary rate proposal for the Board's consideration as a direct result of that information-gathering process. Revisions to the proposal will enable LCRA to recover costs while mitigating future rate impacts to its customers.

LCRA has long been committed to being a responsible steward of the river and the basin's natural resources. LCRA is determined to responsibly manage the water of the lower Colorado River from the uppermost tributaries that feed the Highland Lakes down to Matagorda Bay.

Managing the basin's water system comes with financial costs, known as river management costs. LCRA is committed to allocating these costs among firm and interruptible customer in a fair and equitable way. After evaluating feedback from customers and the public across the basin, LCRA is proposing to allocate river management costs among firm and interruptible customers based on the amount of water they use.

LCRA also recognizes that proposed rates need to consider key factors, including:

- LCRA has no taxing ability and must rely on rates to cover its costs.
- Interruptible water can be, and has been, curtailed in times of severe drought. River management costs continue during these times, and LCRA must recover those costs.
- LCRA needs to work toward rates that fully recover the costs of providing interruptible water. These costs are currently under-recovered.

After considering these factors and input from customers and the public, LCRA staff is proposing a change in water rates that differs from the January proposal. The revised proposal:

POTENTIAL NEW WATER RATES
GET THE FACTS

STAY UP TO DATE:
SUBSCRIBE TO WATER RATES E-NEWSLETTER

NEW WATER PROJECTS

- Allocates river management costs based on the amount of water used instead of a share of committed firm supply.
- No longer includes costs of developing new water supply.
- Includes updated cost information that has been developed since January.

Interruptible Water Rate Proposal

The revised rate proposal for interruptible water takes a significant step toward achieving full cost recovery.

The proposal calls for the new rates for Lakeside and Gulf Coast interruptible supply to be effective January 2015, with a goal to raise rates to reach full cost recovery over time. New rates for the Garwood Irrigation Division could be approved for 2014 as part of a separate rate process.

Division	Current Rates	Proposed Rates	Percent Increase	If Full Cost Recovery	Percent Increase
Gulf Coast	$28.52	$54.43	91 percent	$75.68	165 percent
Lakeside	$38.53	$52.91	37 percent	$62.06	61 percent
Garwood	$32.81	$41.98*	28 percent	$41.98	28 percent

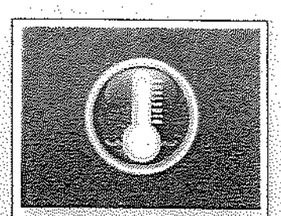
All rates are per acre-foot of water. An acre-foot is the amount of water needed to cover an acre with one foot of water, or 325,851 gallons.
**As part of a separate rate process, LCRA is working on rates for 2014 that may be retroactively applied to Garwood and other irrigation customers that use LCRA groundwater and run-of-river water, or make use of LCRA canals to transport their own groundwater.*

Firm Water Rate Proposal

The proposed firm water rate fully recovers river management costs in all years, including years when interruptible supply is not provided.

In years when interruptible supply is provided, the revenues from interruptible sales will be used to benefit customers in areas such as:

- Debt retirement
- New supply development (not including the Lower Basin Reservoir Project and groundwater on LCRA property in Bastrop County)
- Potential rate credits.



TEXAS DROUGHT

Current conditions in the lower Colorado River basin

FIND OUT MORE

Water Rates Fact Sheets

- Proposed firm water rates
- Proposed interruptible water rates
- How are water rates determined?
- Garwood irrigation division proposed rates
- Lakeside irrigation division proposed rates
- Gulf Coast irrigation division proposed rates

Important Links

- Intensity of the drought
- Daily River Report
- Water flowing into the Highland Lakes: January - February

Current rate	January Proposal (2015)	Current Proposal (2015)	2016-2019 (Projected)
$151.00	$179.00	$175.46	3 percent average annual increase

All rates are per acre-foot of water. An acre-foot is the amount of water needed to cover an acre with one foot of water, or 325,851 gallons.

Rate Revision Process is Ongoing

LCRA staff will continue to meet with customers and the public across the basin to discuss water rates and collect feedback for the LCRA Board to evaluate. Proposed rates are subject to change.

Sign up for the drought e-newsletter | LCRA water rates page | LCRA.org

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LCRA | 3700 Lake Austin Blvd. | Austin | TX | 78703

City of Bastrop

Water Well Production

Comparison

XS Ranch

1 well at 1,500 gpm for 16hrs/day = 1,440,000 gpd

Ingram

2 wells – 1 @ 1,000 gpm and 1 @ 300 gpm for 16 hrs/day = 1,248,000 gpd

difference of 192,000 gpd

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Gene Kruppa

From: James.Dwyer@CH2M.com
Sent: Friday, January 24, 2014 9:04 AM
To: gene@befcoengineering.com
Cc: mtalbot@cityofbastrop.org; Joe.Jenkins@CH2M.com
Subject: Ingram Wells Proposal review
Attachments: Supply_proposal_Comments.docx

As presented in the attached memo prepared by CH2M HILL, the aggregate production from the Ingram wells is high in TDS (slightly over 900 mg/L) and is expected to exceed the Texas DW standard of 1,000 mg/L within a few years of constant pumping. With the Fisherman's Park wells generally producing water around 400 mg/L TDS, it is reasonable to assume that Bastrop will need at least 400 gpm of Fisherman's Park water to dilute the Ingram wells water to ensure full utilization of the Ingram wells in the long-term. Even then, the utility should anticipate complaints of salty water as the Ingram supply is introduced. The required Fisherman's Park rate may be even higher if additional Simsboro water is introduced into the system upstream of the blend point.

The proposed Ingram well yields appear to be realistic given the available drawdown at the site.

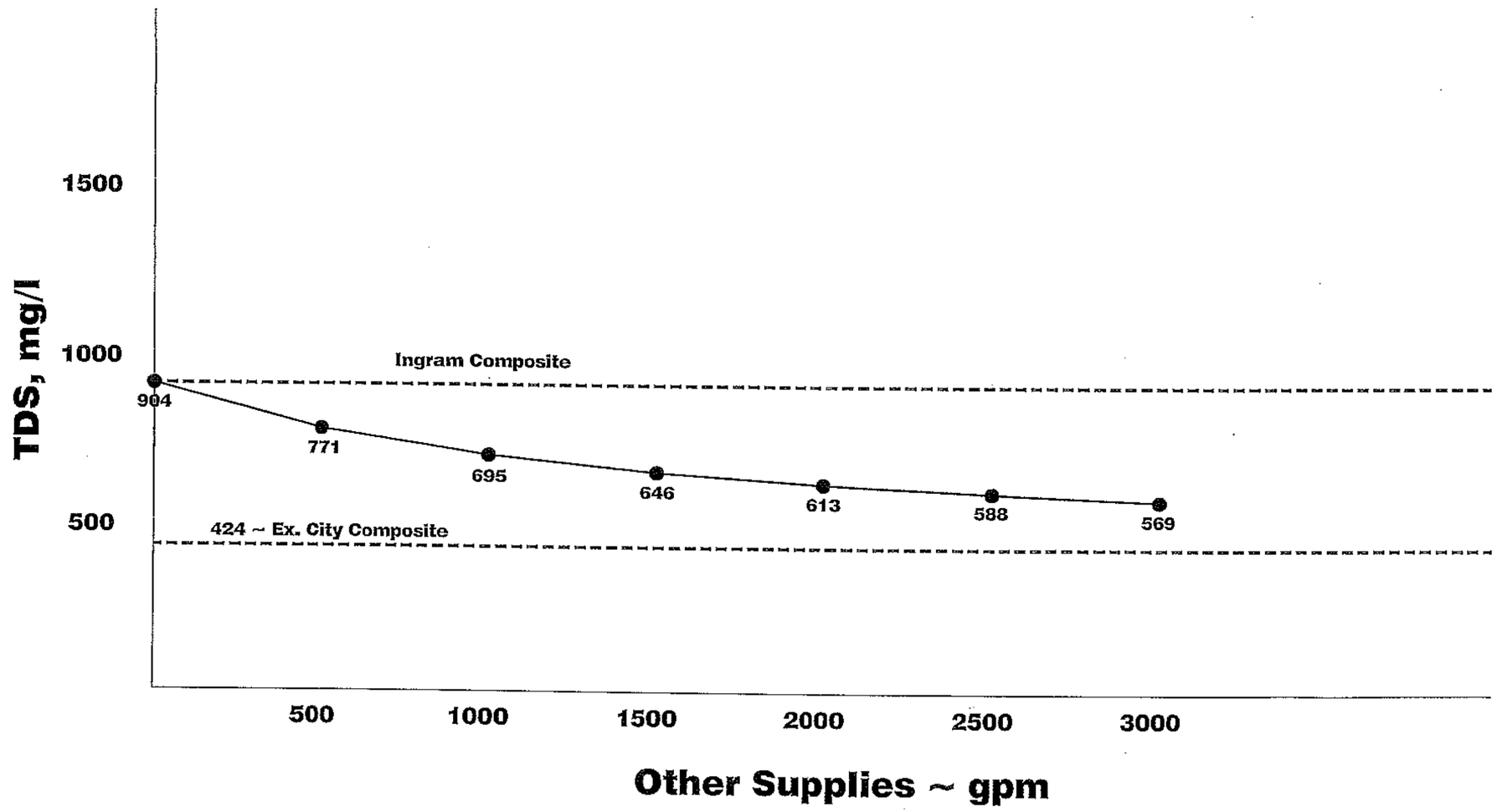
Gene Kruppa

From: James.Dwyer@CH2M.com
Sent: Monday, March 24, 2014 11:23 AM
To: gene@befcoengineering.com; mtalbot@cityofbastrop.org
Subject: Well H and Well I reliability

Based on the operating records and construction information provided by Trey Job (3/19/14) for the two Bob Bryant wells, it appears that the well H (alluvial well) pumping level is in the screen interval. In fact, the screen generally operates between 50% and 67% dewatered based on the period of record from 1/14/13 and 3/6/14. This well is being operated at or near the maximum yield for the current conditions. While this period has been relatively dry, it is possible that river flows, and correspondingly static levels in the well could decline further. Any further decline in river flows or pumping from nearby alluvial wells (within Bob Bryant Park) have the potential to reduce the yield in Well H below historical amounts.

Although Well I (Simsboro) has been operating significantly below the maximum yield based on available drawdown, the water produced from this well is relatively high in dissolved solids. Bastrop currently dilutes the flow by blending with Well H flow. Therefore, it is possible that the production rate from Well I may need to be reduced if the rate of production from Well H declines.

CITY OF BASTROP
WATER SUPPLY
BLENDING INGRAM & SUPPLY



*ASSUME INGRAM WELLS – 1,000 gpm – 950 TDS
300 gpm – 750 TDS
COMBINED 904 TDS

CITY OF BASTROP COMPOSITE ~ 424 mg/l TDS

F:\JULIANA\LAND PROJECTS 3\BASTROP\DWG\2013-BASTROP METER -WELL GROWTH CHART.DWG

BEFCO ENGINEERING, INC.
P. O. Box 615
LaGrange, Texas 78945
(979) 968-6474
E-2011

3/18/14

RATE IMPACT

COMPARISON OF XS RANCH OPTIONS 1, 2 AND 3
April 1, 2014

DESCRIPTON	FY14	FY15	FY16	FY17	FY18	FY19
Rate Increase						
Option 1	0.0%	8.0%	3.5%	5.8%	8.7%	7.5%
Option 2	0.0%	5.4%	4.0%	5.5%	8.7%	7.8%
Option 3	0.0%	7.2%	4.0%	5.3%	8.7%	7.8%
Months of Operating Reserve						
Option 1	3	3	3	3	3	3
Option 2	3	3	3	3	3	3
Option 3	3	3	3	3	3	3
Times Coverage (inc. Non-rate revenues)						
Option 1	168.64%	150.18%	150.15%	150.34%	150.28%	150.34%
Option 2	168.64%	150.53%	151.55%	150.41%	150.15%	150.07%
Option 3	168.64%	150.21%	151.48%	150.08%	150.24%	150.48%
Amount Drawn Down from Carryover Reserves to Meet Current Year Costs						
Option 1	$0	$0	$0	$0	$0	$0
Option 2	$0	$0	$0	$0	$0	$0
Option 3	$0	$0	$0	$0	$0	$0
Accumulated Capital Reserve Available to Avoid Debt Service						
Option 1	$2,164,853	$2,820,404	$3,537,468	$4,259,377	$5,062,655	$5,991,338
Option 2	$2,164,853	$2,820,404	$3,506,655	$4,213,610	$4,982,600	$5,871,337
Option 3	$2,164,853	$2,801,654	$3,483,443	$4,189,415	$4,953,298	$5,843,685