WTP Testing Summary

• Conducted bench- and pilot-scale testing for treatment of sand, iron sulfide, hydrogen sulfide, iron, manganese, and arsenic

• Hollywood wells (2, 4, 5, and 6) and Maple wells (1 and 2)

• Draft pilot report submitted by Carollo, under staff review
WTP Testing Process Flow

1. **Start Testing** (Move from Low Cost/ Simple to Higher Cost/ Complex Solutions)

2. **Acidification Jar Testing** (Dissolve Raw Water Particles)
   - **Particle Removal Successful?**
     - Yes: **Full Scale Acidification Testing and RO Piloting**
     - No: **Sand Separator Pilot Testing for Particle Removal**

3. **Particle Removal Successful?**
   - Yes: **Investigate Means for Fouulant Removal**
   - No: **Oxidation/Media Filtration (Particle/Iron/Manganese/Hydrogen Sulfide/Iron Sulfide/ Arsenic Removal)**
     - **Particle and Fouulant Removal Successful?**
       - Yes: **Advanced Treatment (Microfiltration)**
       - No: **Additional RO Piloting and Multiple Well Testing**

4. **Yes** to Acidification Jar Testing
   - **Particle Removal Successful?**
     - Yes: **Full Scale Acidification Testing and RO Piloting**
     - No: **Stop**

5. **Stop** (Somewhat)

6. **Design Criteria Development and Report Preparation**
Raw Water Blowdown

• Remove particles within the well raw water pipelines upon well start-up
• Flush out constituents with large chlorine demand
Sand Separator

- Capture particles such as iron sulfide and sand, which wells produce during operation
- Reduce particle loading to RO process, prevent membrane fouling and differential pressure shutdown
Oxidation/Media Filtration

- Remove iron sulfide, hydrogen sulfide, iron, manganese, and arsenic
- Stabilize raw water and provide RO with particle-free water
Next Steps

• City staff to review draft report submitted by Carollo and provide findings to PWC in May
  - Executive Summary
  - Testing Background, Methodology, and Results
  - Proposed Design
  - Project Delivery Methods
  - Cost and Schedule
  - Recommendations
Any Questions