RESOLUTION NO. 1381

A RESOLUTION OF THE CITY OF PRINEVILLE APPROVING A PERSONAL SERVICES AGREEMENT WITH CH2M HILL ENGINEERS, INC. TO PROVIDE PERSONAL SERVICES FOR THE HELIPORT WELL MODIFICATIONS AND CROOKED RIVER PARK WATER TREATMENT PLANT

Whereas, The City of Prineville ("City") is planning to design and construct several improvements to its potable water system under a progressive design-build contract with Taylor Northwest, including: (a) Modifying the existing Heliport Well to allow inject; (b) Constructing a new well near Industrial Way; (c) Constructing a Distribution Pump Station; (d) Constructing a wellfield in Crooked River Park; and (e) Constructing a Water Treatment Plant adjacent to Crooked River Park; and

Whereas, City requires the use of a professional designer for the modification of the existing Heliport Well and for the Crooked River Water Treatment Plant; and

Whereas, CH2M Hill Engineers, Inc ("CH2M Hill") a subsidiary company of Jacobs Engineering Group, is an engineering company that provides consulting, design, construction, and operation services for corporation, federal, state, and local governments; and

Whereas, City's Council serves as the Local Contract Review Board for the City and pursuant to City Resolution 1266 Section 8(C), may award personal services contracts according to specific criteria that are applicable to the services provided; and

Whereas, engineering services are considered personal services pursuant to City Resolution 1266; and

Whereas, a public notice was published in the February 1, 2019 edition of the Central Oregonian setting the February 12, 2019 Prineville City Council meeting as the time and place to comment on the City's draft findings for exemption from competitive bidding for a public personal services contract; and

Whereas, a public hearing was held on February 12, 2019, at the Prineville City Council meeting to allow an opportunity for any interested person to appear and present comment.

Whereas, Pursuant to City Resolution No. 1266, City Counsel finds that CH2M Hill meets the following applicable criteria as set out in City Resolution 1266, Section 8(C):

1. Total costs to the City for delivery of services:

- The totals costs for the design of Heliport Well Modifications and Crooked River Parker Water Treatment Plant is $1,000,000.00, as more fully explained in Exhibit A, incorporated herein.

2. Expertise of CH2M Hill in the required area of specialty:

- CH2M Hill has considerable knowledge and expertise in this required area of specialty as provided on Exhibit B, which is incorporated herein.

3. References regarding prior work done by the CH2M Hill:

- CH2M Hill has worked with the city in past and the work product has been excellent. They have completed their work in a timely manner and at a reasonable cost to the City.

4. Capacity and capability to perform the work, including any specialized services within the time limitations for the work:

- CH2M Hill has designed more than 100 manganese removal facilities, including projects larger than the proposed project desired by the City. CH2M Hill has designed similar two stage filtration systems in Sri Lanka, Washington State, and Fairbanks, Alaska.

5. Educational and professional records, including past records of performance on contracts with governmental agencies and private parties with respect to cost control, quality of work ability in schedules, and contract administration, where applicable:

- See Exhibit B.

6. Availability to perform the assignment and familiarly with the area in which the specific work is located:

- CH2M Hill is available to perform the work. CH2M Hill has an office located in Bend, over 1,000 employees in Oregon, and have over sixty years in experience working in Central Oregon.

7. Timelines of delivery of service:

- CH2M Hill is able to deliver the services requested within the timeline required by the City.

8. Experience in working with the City:

- In addition to the experience evidenced in Exhibit B, CH2M Hill has also developed the following studies associated with the Aquifer Storage and Recovery (ASR) Project in Prineville:
    - Prineville Plateau Area Aquifer Storage and Recovery (ASR) Feasibility Study May 2018;
    - Prineville Airport Area Aquifer Storage and Recovery (ASR) Implementation Plan May 2018;

- Conceptional Design Report – Crooked River Park Wellfield and Heliport Well ASR Modifications October 2018; and
- Pilot Testing in the Summer of 2018 in which CH2M Hill brought in a trailer mounted treatment plant and operated it for six weeks during the summer of 2018 to ensure that the proposed treatment system is effective for the removal of hydrogen sulfide, ammonia, iron, and manganese.

9. Knowledge of the City's needs and desires related to the Contact:

- The City requires a plan with two stages of pressure filtration that includes biological filtration followed by oxidation and adsorption of iron and manganese. CH2M Hill have designed similar filtration systems in Sri Lanka, Washington State, and Fairbanks, Alaska.

Now, Therefore, the City of Prineville Resolves as follows:

1. That the City Council, serving in its role as the Local Contract Review Board for the City, hereby approves the City entering into a personal services contract with CHM2 Hill Engineers, Inc., a subsidiary of Jacobs Engineering Group, to provide design and engineering services related to the modification to the Heliport Well and design of the Crooked River Park Water Treatment plant and authorizes the City Manager to execute, on behalf of the City, such contract and any other related documents.

Approved by the City Council this ____ day of February, 2019.

_____
Steve Uffelman, Mayor

ATTEST:

_____
Lisa Morgan, City Recorder

EXHIBIT C
City of Prineville

Water Treatment Plant and Heliport Well Modification Design

Level of Effort - Updated 12/31/18

Staff																										Summary			
Rate	Lee Odell Senior Technical Consultant $ 250.00	Rebecca Mace $ 250.00	Cindy Yeager Project Manager $ 198.77	Dwight Smith Design Manager $ 171.91	Enoch Nicholson Senior QC Reviewer $ 206.00	Hazbon Burns - Process $ 175.86	Wes Bleisner Junior Process $ 111.98	Todd Cotton- Geotechnical $ 205.34	Kevin Bral - Sr Mechanical $ 250.00	Geoff Kirsten Architectural $ 205.89	Dwight Smith - Structural $ 171.91	Shinji Goto - Structural $ 232.30	Jim Sachinger- Bldg Mech $ 190.23	Don Wagner - Sr. Electrical $ 250.00	Jake Dunn - Jr. Electrical $ 139.35	Richard Pearson - ELC $ 250.00	Doug Sunseri- CAD Lead $ 170.66	CAD Designer $ 119.32	Lindsey Gordon- Office Support $ 107.36	Mahn, Kathleen - Specs Process $ 139.38	Accounting $ 25.92	Total CH2M Labor Hours	Total Labor	Direct Expenses	Sub-consultants	Total Budget
Task 1 - Heliport ASR Modification																													
Equipment Purchase List and Descriptions	2				6				24																				
80% Design	1								70													32	7,730	$ -	$ -	$ 7,730			
100% Design	1								70									24				95	20,614	$ 2,100		$ 22,714			
Task 1 - TOTAL	4				6				164									24				95	20,614			$ 20,614			
Task 2 - Facility Design																		48				222	$ 48,964	$ 2,100	$ -	$ 51,064			
Equipment Purpurchase (Filters, Aeration, Chlorine)	100					20	40															160	$ 32,996	$ -	$ -	$ 32,996			
Geotechnical Data and Recommendations Report								120																					
60% Design	82		6	54	28	140	20	6		68	12	60	70	48	50	60	60	370	14			216	$ 35,605	$ -	$ 7,558	$ 43,463			
80% Design	108		14	108	60	210	16	10		148	12	120	112	60	108	110	110	930	22	100		1,168	$ 203,013	$ 1,000	$ -	$ 204,013			
100% Design	108		5	32	18	160	16	4		52	12	48	54	32	36	32	40	350	8	48		2,358	$ 386,793	$ 1,040	$ -	$ 387,833			
Task 2 - TOTAL	398		25	194	106	630	92	140		268	36	228	236	140	194	222	210	1730	60	148		1,055	$ 179,300	$ 2,000	$ -	$ 181,300			
Task 3 - Permitting and Regulatory Approval																						4,957	$ 838,007	$ 4,040	$ 7,558	$ 849,606			
DOH Approvals	4			12								16																	
																						32	$ 6,780	$ 500	$ -	$ 7,280			
Task 3 - TOTAL	4			12								16																	
Task 4 - Project Management																						32	$ 6,780	$ 500	$ -	$ 7,280			
Monthly Reports, Weekly Meetings, and Updates	48		65																		80								
Project Coordination and Oversight	48		48																			193	$ 26,994	$ -	$ -	$ 26,994			
Meetings	60	60	60																			96	$ 21,541	$ -	$ -	$ 21,541			
SubContracts			8																			180	$ 41,926	$ -	$ -	$ 41,926			
Subconsultant Markup (@10%)																						8	$ 1,550	$ -	$ -	$ 1,550			
Task 4 - TOTAL	156	60	181																		80	-	$ -	$ -	$ -	$ -			
TOTAL PROJECT HOURS	562	60	206	206	112	530	92	140	164	268	36	244	236	140	194	222	210	1778	60	148	80	477	$ 92,051	$ -	$ -	$ 92,051			
TOTAL EXPENSES																						5,668							
																							$ 985,801	$ 6,640	$ 7,558	$ 1,000,000			

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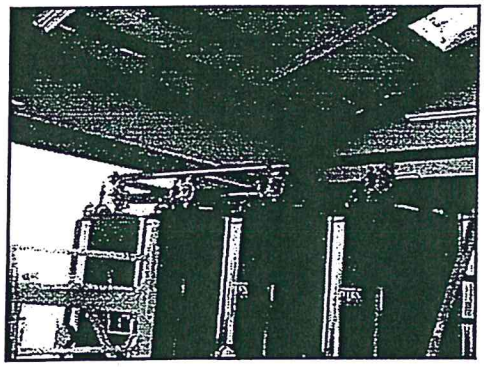
SECTION 1: KNOWLEDGE

The City of Prineville Aquifer Storage Recovery project to add ammonia, iron and manganese treatment and chlorination requires an experienced, focused team to provide low-cost, effective treatment. **Lee Odell**, a nationally-recognized water treatment expert, will be our Senior Process Lead. Lee is supported by a team of local experts in electrical, structural, architectural services, and others who have recently designed a similar treatment facility for another client. This team is committed to providing the City of Prineville with a constructible treatment plant on time and within budget and has the expertise and knowledge to do it.

Our understanding of manganese treatment spans over 25 years of research and application:

- 1990s: Early applications of manganese treatment technology led to evaluation of various media types and approaches. Jacobs developed clear design and operating guidance.
- 1996: Lee Odell designed the first municipal high rate iron and manganese removal system in the United States to use pyrolusite (manganese dioxide ore).

Today, there are more than 300 of these systems in operation, with more than seven vendors in the country supplying this type of treatment system. The advantages of our treatment knowledge go beyond effective treatment and include efficient design. Our team's lessons learned from more than 200 groundwater treatment projects has led us to develop simple, yet effective, treatment facilities. Minimal chemical requirements reduce the dependency on multiple chemical feed systems including chlorine, permanganate and pH adjustment; and filter arrangement eliminates the need for separate backwash pumps. Our efficient approach simplifies plant operations because programmable logic controller (PLC) programming is streamlined and requires less equipment than conventional approaches.



Filter vessels are included in the City of Prineville basis of design prepared by Jacobs.

As a result of our treatment approach, the capital cost of iron and manganese removal has been reduced by 50 percent compared to more traditional methods. Our manganese removal strategy includes the following:

- Preselect an equipment supplier through a performance specification.
- Design a multiple tank filter system that has a backwash rate less than the well output.
- Use vendor provided control systems to operate the filter plant.
- Provide an experienced design team to complete the plant design.

Exhibit 2 highlights the benefits of our manganese removal facility design approach. Pilot testing was previously conducted in 2018 by Lee Odell to confirm the assumptions used to prepare the basis of design.

EXHIBIT 2
Key Features of Jacobs's Design Approach

SECTION 2: EXPERIENCE

Jacobs has a long-standing history and commitment to serving clients throughout Washington State as well as the central Puget Sound area, including the Kitsap and Olympic Peninsulas. We have worked extensively with the following clients in the Pacific Northwest: Port Angeles, Clallam PUD, Port Townsend, Jefferson PUD, Kitsap PUD, Bremerton, Bainbridge Island, Manchester, Kingston, Mason County, West Sound Utility District, Rainier View Water Company, and a variety of other private industries.

Our proposed project team has recently completed more than 200 groundwater treatment studies and more than 100 GWTP designs for Utilities in Washington, Oregon, California, Alaska, Arizona, New Mexico, Illinois, Colorado, and South Carolina. We develop cost-effective approaches that enable our clients to treat manganese in groundwater for half the cost of traditional methods. Exhibit 3 highlights some of the similar water treatment projects that our team has completed.

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EXHIBIT 3

Jacobs Team Similar Project Experience

Year	Client	Project
2018	City of Prineville, OR	Pilot Testing and Conceptual Design Report for ASR Project
2018	Clark Public Utilities	Paradise Point Water Treatment Plant Design
2017	City of Bellingham, WA	Dissolved Air Flotation Construction Services
2016	Fall City, WA	Arsenic Removal Groundwater Treatment
2015	City of Bellingham, WA	Dissolved Air Flotation Design
2012	City of Camas, WA	Water Supply Project (Slowsand WTP and Pipeline)
2012	City of Raymond, WA	WTP Improvements
2012	Jefferson County PUD, WA	Sparling WTP (Groundwater Treatment)
2012	Silverdale Water District, WA	Ridgetop WTP (Groundwater Treatment)
2011	Alaska Dept of Fish & Game	RBSFH Iron and Manganese Plant Upgrade Design and Startup
2011	City of Meridian	Iron and Manganese Pilot Testing Wells 15, 18, 22, and 27
2010	Rainier View Water Company	Silver Creek Iron and Manganese Design
2010	Rainier View Water Company	System Wide Corrosion Control
2010	City of Glendale AZ	Zone 4 GWTP
2010	California Water Service Company	Marysville Station 10 Manganese Predesign &Design
2010	California Water Service Company	Marysville Station 14 Manganese Pilot Testing Predesign & Design
2009	Truckee Meadows Water Authority	I-Street Iron, Manganese and Arsenic Removal Predesign
2009	H&R Water Co	Lake Tapps Well Water Treatment Design
2009	City of Woodburn	Chlorine Evaluation
2009	Snohomish PUD	Lake Stevens Well Pilot Testing
2009	Hilton Head Prevention of Significant Deterioration (PSD)	Brackish Water Reverse Osmosis (RO) System Review
2009	Clark Public Utilities	Carol J. Curtis WTP Construction Services
2008	Alaska Dept of Fish & Game	RBSFH Iron and Manganese Removal Design
2008	Jefferson PUD	Sparling Iron and Manganese Removal Pilot Testing
2008	Rainier View Water Company	Silver Creek WTP Design
2008	Skagit PUD	Skagit View Pilot Testing & Design
2008	Kitsap PUD	Kingston Well 8 Pilot Testing
2008	Kitsap PUD	Vinland Iron and manganese pilot testing
2007	City of Glendale AZ	Glendale Zone 4 GWTP Design
2007	Clark Public Utilities	Carol J. Curtis WTP Design
2007	City of Nampa	Well 16 Iron and Manganese Removal
2007	City of Seminole	Iron and manganese pilot testing
2006	City of Nampa	Well 16 Pilot Testing
2006	Soquel Creek Water District	Operations and Maintenance (O&M) Manual for T-Hopkins Well
2006	Kitsap PUD	Vinland Iron, Manganese and Arsenic Removal
2006	Kitsap PUD	Kingston Iron and Manganese Removal
2006	Laytonville, CA	Laytonville Well 1 Pilot Testing
2005	Clark Public Utilities	Hayes Road Pilot Testing
2005	Ames Lake Water Association	Ames Lake Iron and Manganese Removal
2005	Warm Beach Water Association	Warm Beach Iron and Manganese Removal
2005	H&R Water Co	Orting 15 Iron and Manganese Removal
2005	H&R Water Co	Orting 15 Corrosion Control
2005	Jefferson PUD	Sparling Treatment Expansion
2005	Jefferson PUD	Sparling Treatment Expansion Testing

Year	Client	Project
2005	United States Agency for International Development (USAID)	Sri Lanka Iron and Manganese Treatment
2005	Jefferson PUD	Sparling Iron and Manganese Predesign
2005	Jefferson PUD	Sparling Pilot Testing
2005	Spanaway Water Company	Well 9 Iron and Manganese
2005	Fall City Water District	Arsenic and Manganese Removal
2005	King County Water District 111	Well 9 Iron and Manganese
2005	King County Water District 111	Well 3 Iron and Manganese Removal

Detailed Project Descriptions

Pilot Testing, City of Prineville, OR

Relevance to Project

- Ammonia, iron and manganese removal pilot testing
- Operational cost savings

Key staff involved: Rebecca Maco, Project Manager; Lee Odell, Senior Process Lead

Jacobs performed pilot testing of the recommended technologies for removal of ammonia, iron and manganese for the City of Prineville Aquifer Storage Recovery (ASR) project. Lee Odell led the pilot testing and development of the conceptual design that was included within the City of Prineville ASR project's Implementation Plan, dated May 2018.

Paradise Point Water Treatment Plant, Clark PUD, WA

Relevance to Project

- Iron and manganese removal pilot testing and design
- Operational cost savings

Key staff involved: Cindy Yeager, Project Manager; Lee Odell, Senior Reviewer

Jacobs designed this 15-MGD WTP for iron, manganese, and hydrogen sulfide removal for Clark Public Utilities. Construction is slated to begin in early 2019.

Water treatment issues included elevated manganese and iron levels. The preliminary evaluation included pilot testing, site visits, sampling program, and regulatory and permitting reviews. Criteria for evaluation of treatment alternatives were established and costs were estimated for each alternative. The compact site incorporates a high filter loading rate of 10 gpm/ft^2 using MnO_2 filters and onsite sodium hypochlorite generation. Backwash water has the option of being recycled or discharged to wastewater lagoon.

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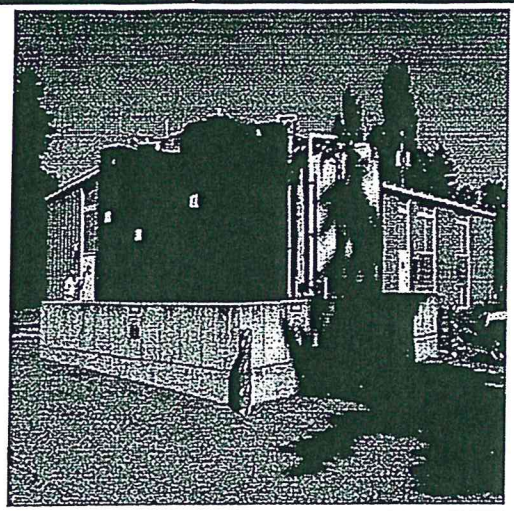
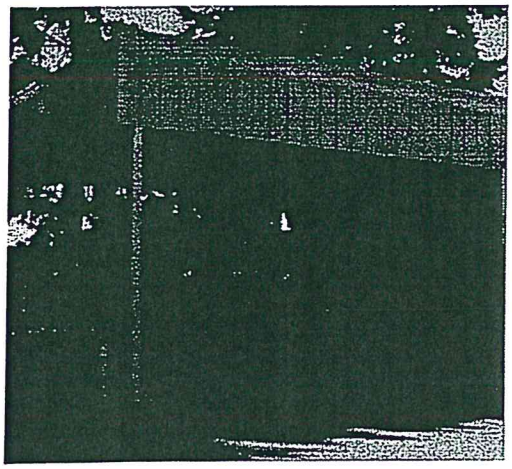
Sparling WTP, Jefferson County PUD, WA





Relevance to Project

- Iron and manganese removal pilot testing and design
- Generator design
- Operational cost savings

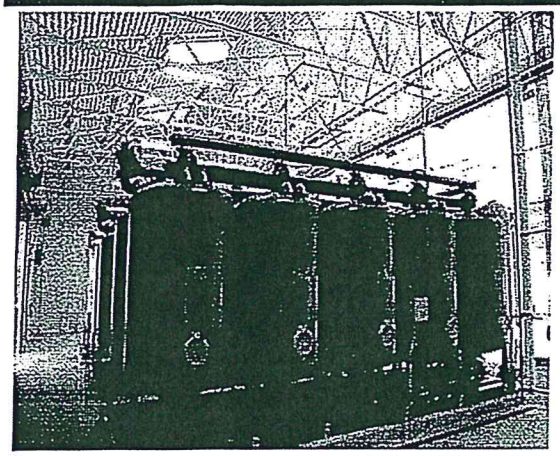
Key staff involved: Lee Odell, Senior Reviewer

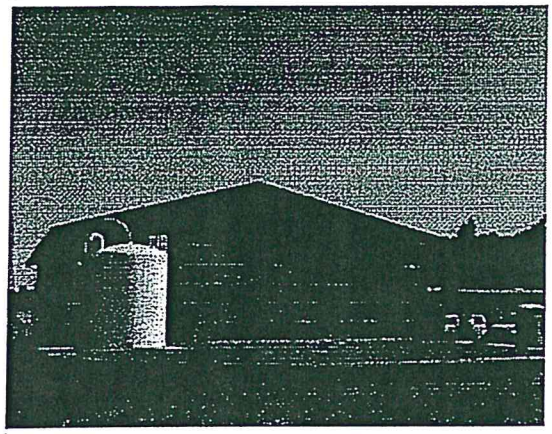
Jefferson PUD's Sparling WTP is the backbone supply of the PUD's system. Jacobs designed the original plant in 1982 and expanded it in 2006 by adding MnO_2 filters for summer peaking. This iron and manganese treatment plant features a 150-kW portable generator sized to power the well, pump, chemical feed pumps and the booster pumps.

Jacobs designed a two-stage biological and adsorption iron and manganese removal plant that cut the chemical cost of operating the plant from $110,000 to $20,000. The two-stage plant treats high levels of iron in the first stage using iron bacteria and remove manganese in the second stage with chlorine and MnO_2 media.

The plant is located adjacent to the existing Sparling well and the new plant site was constrained by wetlands and county setback requirements. A plan was developed that allowed the PUD to construct for initial capacity of 1,200 gpm and expand it to 2,400 gpm in the future.

Carol J. Curtis WTP, Clark County, WA





Relevance to Project

- Cost-effective manganese removal
- Innovative ideas

Key staff involved: Lee Odell, Project Manager

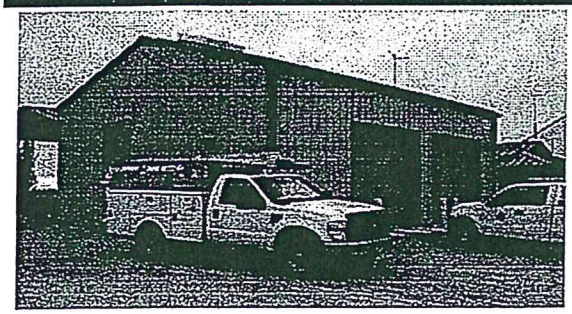
Jacobs designed this 10-MGD WTP for iron, manganese, and hydrogen sulfide removal for Clark Public Utilities. It was constructed in 2010 at a cost of $3.4 million dollars.

Water treatment issues included elevated manganese and iron levels along with hydrogen sulfide concerns. The preliminary evaluation included pilot testing, site visits, sampling program, and regulatory and permitting reviews. Criteria for evaluation of treatment alternatives were established and costs were estimated for each alternative. The compact site incorporates a high filter loading rate of 10 gpm/ft^2 using MnO_2 filters and onsite sodium hypochlorite generation.

The facility reuses 100 percent of the backwash water for irrigation of 460 trees on the WTP site. The design includes well houses and pumping stations, water treatment facilities, two offices, a conference room, SCADA facilities and a control room capable of running the entire water system operations if the main operations center goes off-line.

The project included development of two 3,500-gpm wells with 800-horsepower motors and vertical turbine pumps to supply water to the facility. The facility includes a 300-pounds-per-day (lb/day) onsite chlorine generator from MicroChlor. The generator uses salt to produce a 0.8 percent sodium hypochlorite solution that will be the only chemical fed at the WTP. The plant uses all backwash water onsite with no discharge at 10 MGD, the plant will be the largest MnO_2 media plant ever constructed in the United States.

Water Quality Assistance, Longview, WA



Relevance to Project

- Iron and manganese removal

Key staff involved: Lee Odell, Senior Process Reviewer

Jacobs was hired by the City of Longview to evaluate alternative treatment and supply options after the City's new Mint Farm treatment plant came online and customer water quality complaints escalated. This water supply was significantly different from the water previously supplied from the Cowlitz River.

Jacobs worked with a customer advisory committee to develop and evaluate more than 50 water treatment alternatives. Some alternatives would have mitigated some of the water quality concerns with the Mint Farm plant; however, the Customer Advisory Committee ultimately recommended evaluating a collector well on the Cowlitz River due in part to its lower silica levels.

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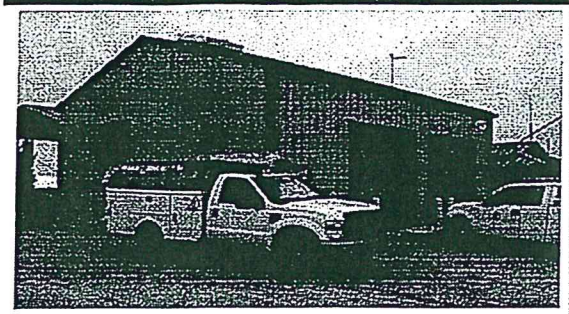
Well 16 GWTP, City of Nampa, ID



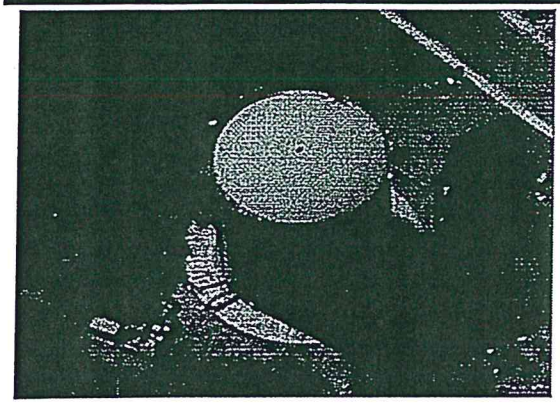
Relevance to Project

- Iron and manganese removal

Key staff involved: Lee Odell, Senior Process Reviewer

Jacobs designed this iron, manganese, and hydrogen sulfide WTP project for the City of Nampa in 2008. The plant includes chlorine and permanganate feeds, and filtration using MnO_2 media. The plant's filter loading rate was designed to minimize the total number of filter vessels needed and keep the cost low. The treatment plant was completed in 2009 on budget and can easily be expanded to a flow of 2,400 gpm.

Silver Creek GWTP, Rainier View Water Company, Puyallup, WA



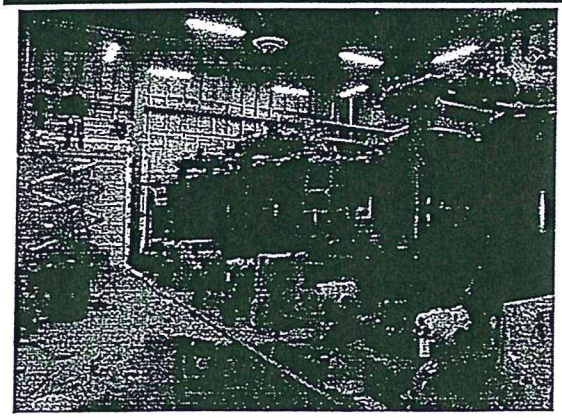
Relevance to Project

- Iron and manganese removal
- Onsite residuals handling

Key staff involved: Lee Odell, Project Manager

The Rainier View Water Company plant treats 500 gpm of water. The water quality in initial reports showed that the manganese levels were approximately twice the secondary maximum contaminant level (MCL). Pilot testing and predesign were completed prior to design on the 500-gpm well. The pilot testing showed that the manganese could effectively be removed from the water supply with MnO_2 filtration at a loading rate of 11 gpm/f^2. Jacobs completed predesign and design for a complete new iron and manganese facility on the existing well site. Residuals are infiltrated onsite.

RBSFH Iron and Manganese Removal, Alaska Fish & Game, Fairbanks, AK



Relevance to Project

- Iron and manganese removal
- Process optimization

Key staff involved: Lee Odell, Senior Process Reviewer

Jacobs conducted pilot testing and design for the Ruth Burnett Sport Fish Hatchery in Fairbanks, AK. The treatment system uses MnO_2 filtration in a two-stage treatment system to remove iron and manganese without the use of chlorine, since it is toxic to fish. Jacobs has been working cooperatively with Alaska Fish & Game staff to optimize the treatment performance and has reduced iron and manganese concentrations below 0.1 mg/L for iron and 0.05 mg/L for manganese from raw water concentrations of 7 mg/L of iron and 0.7 mg/L of manganese.

(51)