



**NOTICE OF
ENGINEERING/ENVIRONMENTAL
COMMITTEE
SPECIAL MEETING
October 18, 2023**

NOTICE IS HEREBY GIVEN that the San Lorenzo Valley Water District has called a special meeting of the Engineering/Environmental Committee to be held on **Wednesday, October 18, 2023, 8:30 a.m.**, SLVWD Conference Room, 12788 Highway 9, Boulder Creek.

Any person in need of any reasonable modification or accommodation in order to participate in the meeting may contact the District Secretary's Office at (831) 430-4636 a minimum of 72 hours prior to the scheduled meeting.

This meeting is being conducted as an in-person meeting under the Brown Act, Government Code section 54953, and a quorum of the Committee must participate from the location(s) within the District that are identified above. Members of the public may attend the meeting at the identified location(s). Teleconferencing/videoconferencing access as set forth below is being provided as a convenience only and is not guaranteed. The meeting may continue in person even if teleconferencing/videoconferencing capability is disrupted or unavailable.

The meeting access information is as follows:

<https://us02web.zoom.us/j/85302910432?pwd=Zjk3L2dTZGRqSExsS2hhMTRUckVnZz09>

Passcode: 228734

Or One tap mobile :

+16694449171,,85302910432#,,,,*228734# US

+16699006833,,85302910432#,,,,*228734# US (San Jose)

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

+1 669 444 9171 US

+1 669 900 6833 US (San Jose)

Webinar ID: 853 0291 0432

Passcode: 228734

AGENDA

1. Convene Meeting/Roll Call

2. Oral Communications

This portion of the agenda is reserved for Oral Communications by the public for items which are not on the Agenda. Please understand that California law (The Brown Act) limits what the Board can do regarding issues raised during Oral Communication. No action or discussion may occur on issues outside of those already listed on today's agenda. Any person may address the Committee at this time, on any subject that lies within the jurisdiction of the District. Normally, presentations must not exceed three (3) minutes in length, and individuals may only speak once during Oral Communications. Any Director may request that the matter be placed on a future agenda or staff may be directed to provide a brief response.

3. New Business:

Members of the public will be given the opportunity to address each scheduled item prior to Committee action. The Chairperson of the Committee may establish a time limit for members of the public to address the Committee on agenda items.

- a. CROSS COUNTRY PIPELINE - PEAVINE ABOVE-GROUND CONSTRUCTION COST ESTIMATE
Review and discussion by the Committee regarding above-ground cross country cost estimate for Peavine.

4. Unfinished Business:

Members of the public will be given the opportunity to address each scheduled item prior to Committee action. The Chairperson of the Committee may establish a time limit for members of the public to address the Committee on agenda items.

- a. LEAK DETECTION REPORT
Review and discussion by the Committee regarding the Leak Detection report.

5. Informational Material

Here is a link to previous Engineering/Environmental Committee meeting minutes:
[All Engineering/Environmental Committee Meeting Minutes | San Lorenzo Valley Water District \(slvwd.com\)](#)

6. Adjournment

Agenda documents, including materials related to an item on this agenda submitted to the Committee after distribution of the agenda packet, are available for public inspection and may be reviewed at the office of the District Secretary, 13060 Highway 9, Boulder Creek, CA 95006 during normal business hours. Such documents may also be available on the District website at www.slvwd.com subject to staff's ability to post the documents before the meeting.

Certification of Posting

I hereby certify that on October 13, 2023, I posted a copy of the foregoing agenda in the outside display case at the District Office, 13060 Highway 9, and at the SLVWD Boardroom, 12788 Highway 9, Boulder Creek, California, said time being at least 24 hours in advance of the special meeting of the Engineering & Environmental Committee of the San Lorenzo Valley Water District in compliance with California Government Code Section 54956.

Executed at Boulder Creek, California, on October 13, 2023.

Holly B. Hossack, District Secretary

MEMO

DATE: October 18, 2023
TO: Engineering Committee, San Lorenzo Valley Water District
FROM: Rick Rogers, District Manager
SUBJECT: Cross Country Pipeline - Peavine Above-Ground Construction
Cost Estimate

WRITTEN BY: Rick Rogers, District Manager

PRESENTED BY: Rick Rogers, District Manager

STAFF RECOMMENDATION

Staff recommends that the Engineering & Environmental Committee review this memo and cost estimate for replacing the Peavine Cross-Country Pipeline and request the Board of Directors to direct staff to proceed with replacing the Peavine Supply Line above ground as outlined in the cost estimate.

RECOMMENDED MOTION

Request the Board of Directors review the Peavine Supply line Construction cost estimate and move this project to construction.

BACKGROUND

The CZU Fire of August 2020 resulted in substantial damage to Santa Cruz County. The fire consumed approximately 86,509 acres including 1,300 acres of District-owned water shed destroying approximately 7 miles of above-grade HDPE pipe used for raw water conveyance from the district surface water sources to the Water Treatment Plant. In considering

replacement the district solicited a request for a proposal for a constructability study and alternative analysis report. The constructability report provided cost estimates for replacing the pipe burring the pipe to protect it from future fire. The report did not provide a cost estimate for replacing the pipe to pre-disaster conditions (above ground).

At the September 14, 2023, Engineering & Environmental Committee meeting the committee requested staff to prepare a cost estimate to replace the Peavine Supply to pre-disaster design (above grade). Staff prepared a cost estimate (attached) for constructing the pipeline as the District did In the late 1980's above grade. The construction was completed by hand labor utilizing California Conservation Crews (CCC) and local force account labor. Helicopters were used to deliver pipe along the pipeline route. This technic was required as part of environmental concerns as the pipe snaked along the Ben Lomond Mountain and the use of excavators and road building. During design and survey found that large portions of the waterline alignment were likely not accessible by equipment (large or small) without very significant new road/trail construction which will likely be cost-prohibitive, environmentally unfeasible, and/or unwarranted in light of alternative installation method selected.

The attached cost estimated is for replacing the Peavine Supply to pre-CZU Fire design (above grade) utilizing the same construction methods ie; helicopters, CCC hand Crews living in Spike Camps, and local force account labor. CCC Crews would reestablish the pipe bench and force account labor would install the new pipe. The total cost estimate for the above-ground construction is **\$2,036,509.05** including a 20% contingency.

As indicated on the spreadsheet (P/Five X) a considerable amount of the equipment will also be utilized in the reconstruction of the Five Mile Clear Creek/Sweetwater pipeline rebuilding project bringing the cost lower. FEMA Grants will cover 90% of replacement costs to preexisting conditions. The Constructability Study Technical Memorandum and Alternative Analysis Report by Freyer & Laureta estimated the cost to construct below ground is between \$10.8 and 12.5 million dollars and does not include tree removal. Buried pipeline may have substantial costs to the District as the additional costs for burring approximately \$10.5 million would have to be negotiated with FEMA

Staff is recommending that the Engineering committee recommend to the Full Board to move this project ahead with above-grade construction starting in Spring 2024 and completing the project in Fall 2024.

PRIOR COMMITTEE ACTION

FISCAL IMPACT

\$2,036,509.05 FEMA 90% Reimbursement District contribution

ENVIRONMENTAL IMPACT

TBD

ATTACHMENTS AND RELEVANT LINKS TO DISTRICT WEBSITE

- Peavine Above-Ground Estimated Costs
- F & L Cross-Country Cost Estimates

- Misc. Costs from Vendors & Contactors
- https://www.slwvd.com/sites/g/files/vyhlif1176/f/uploads/slwd_crosscountry_constructability_2022-03-16.pdf
- https://www.slwvd.com/sites/g/files/vyhlif1176/f/uploads/slwd_cross_country_pipeline_constructability_study_peer_review_11-24-22.pdf

PEAVINE SUPPLY LINE - ABOVE GROUND INSTALLATION

ESTIMATED SUMMARY OF PROJECT COSTS

Materials	P/Five	Qty	Unit	Price/Unit	Total	Notes
8" HDPE Pipe DR 32.5		8,341	LF	\$ 4.50	\$ 37,534.50	
8" HDPE Pipe DR 11		500	LF	\$ 11.50	\$ 5,750.00	
Molded Flange Adapters 8" DR11		26	EA	\$ 40.00	\$ 1,040.00	
DIP Back Up Rings 8"		26	EA	\$ 50.00	\$ 1,300.00	
Electrofusion Coupling 8"		15	EA	\$ 120.00	\$ 1,800.00	
HDPE Bull Nose DR 11		2	EA	\$ 1,100.00	\$ 2,200.00	
Gate Valve 8" FLG		16	EA	\$ 850.00	\$ 13,600.00	
Nut/Bolts/Gaskets		1	LOT	\$ 2,000.00	\$ 2,000.00	
Tee 8X8X8 FLG		4	EA	\$ 350.00	\$ 1,400.00	
Fire Proof Poles 16 Feet		48	EA	\$ 400.00	\$ 19,200.00	
Cross Arm Composit		48	EA	\$ 215.00	\$ 10,320.00	
Pipe Trail Restaints		25	Ea	\$ 200.00	\$ 5,000.00	
Cross Arm Hardware		1	LOT	\$ 3,200.00	\$ 3,200.00	
Valve Padlocks		16	EA	\$ 50.00	\$ 800.00	
Valve Locking Cables		16	EA	\$ 25.00	\$ 400.00	

Materials Subtotal \$ 105,544.50

Santa Cruz County Sales Tax 9.25% \$ 9,762.87

Materials Total \$ 115,307.37

Labor	P/Five	Qty	Unit	Price/Unit	Total	Notes
Project Manager Assistance Engineer		6 months			\$ 69,261.44	Assumes Step 7
Crew of Six Field Service Worker II		6 months			\$ 218,016.00	Assumes Step 3
Crew leader Lead Field Service Worker (1)		6 months			\$ 78,873.23	Assumes Step 7
District Manager		80 Hours			\$ 15,094.60	Assumes Current Salary
District Engineer		80 Hours			\$ 8,107.44	Assumes Step 6
CCC Crew (4 months food , showers, & Lodging)					\$ 335,000.33	
Labor Costs SDI, Medicare					\$ 29,785.48	

Labor Total \$ 754,138.51

Equipment	P/Five	Qty	Unit	Price/Unit	Total	Notes
Job Boxes	X	4	EA	\$ 2,500.00	\$ 10,000.00	
Gas Cans	X	6	EA	\$ 40.00	\$ 240.00	
Fuel Gas/Diesel		1	LOT	\$ 2,000.00	\$ 2,000.00	
Chain Saws	X	2	EA	\$ 850.00	\$ 1,700.00	
Warn Wench 10,000 Lbs.	X	3	EA	\$ 2,600.00	\$ 7,800.00	
Wire Rope (wenches, Helicopter)	X	1	EA	\$ 4,000.00	\$ 4,000.00	
Cable Snatch Block	X	2	EA	\$ 225.00	\$ 450.00	
12 Volt Batteries (for Wenches)		6	EA	\$ 250.00	\$ 1,500.00	
Wench Mounting Plate	X	2	EA	\$ 800.00	\$ 1,600.00	
Battery Charger	X	2	EA	\$ 360.00	\$ 720.00	
Generators Honda 2200	X	2	EA	\$ 2,000.00	\$ 4,000.00	
Generator Honda 5000	X	1	EA	\$ 3,000.00	\$ 3,000.00	
Wheel Barrow solid tire	X	2	EA	\$ 225.00	\$ 450.00	
Strapping 9000 Lbs. 3'X 30'	X	8	EA	\$ 2,500.00	\$ 20,000.00	
Cable 200 LF	X	2	EA	\$ 3,000.00	\$ 6,000.00	
Electrofusion Machine	X	1	EA	\$ 4,300.00	\$ 4,300.00	
Extension Cord 10/3 100'	X	2	EA	\$ 220.00	\$ 440.00	
Chain 3/8 X 20 w/hooks	X	6	EA	\$ 120.00	\$ 720.00	
Cell Phones (6 units)	X	1	LOT	\$ 3,000.00	\$ 3,000.00	
RTV Vehicles	X	2	EA	\$ 12,000.00	\$ 24,000.00	
Willkie Talkies (6 units)	X	1	LOT	\$ 10,175.00	\$ 10,175.00	

Equipment Total \$ 106,095.00

Permitting & Other	P/Five	Qty	Unit	Price/Unit	Total	Notes
Hazardous Tree Removal		1	LOT	\$ 181,000.00	\$ 181,000.00	
Environmental Review and permitting		1	LOT	\$ 400,000.00	\$ 400,000.00	
Emergency Accident Response Plan		1	LOT	\$ 20,000.00	\$ 20,000.00	
First Aid Equipment		1	LOT	\$ 800.00	\$ 800.00	
Trail Survey & Staking Iiland		1	EA	\$ 20,000.00	\$ 20,000.00	
Helicopter Lift (estimated 5 flights)		5	EA	\$ 19,950.00	\$ 99,750.00	

Permitting & Other Total \$ 721,550.00

Contingency

20%

20% Contingency \$ 339,418.18

Project Total

\$ 2,036,509.05

Total LF 8,841

Price/LF \$ 230.35

Table 9
Range of Opinion of Probable Project Cost (1)
Cross Country Pipeline Constructability Analysis
San Lorenzo Valley Water District

Low Range

Project Phase	Peavine			5-Mile			HydroPower		
	Units	Unit Price	Cost (2)	Units	Unit Price	Cost (2)	Units	Unit Price	Cost (2)
Construction	1	ls	\$ 8,200,000	1	ls	\$ 31,900,000	1	ls	\$ 680,000
Planning/CEQA/Permitting	%	10%	\$ 820,000	%	10%	\$ 3,190,000	%	10%	\$ 68,000
Design	%	10%	\$ 820,000	%	10%	\$ 3,190,000	%	10%	\$ 68,000
CM/Inspection	%	10%	\$ 820,000	%	10%	\$ 3,190,000	%	10%	\$ 68,000
District Administration	%	2%	\$ 160,000	%	2%	\$ 640,000	%	2%	\$ 10,000
Total			\$ 10,820,000			\$ 42,110,000			\$ 894,000

High Range

Project Phase	Peavine			5-Mile			HydroPower		
	Units	Unit Price	Cost (2)	Units	Unit Price	Cost (2)	Units	Unit Price	Cost (2)
Construction	1	ls	\$ 9,500,000	1	ls	\$ 37,200,000	1	ls	\$ 780,000
Planning/CEQA/Permitting	%	10%	\$ 950,000	%	10%	\$ 3,720,000	%	10%	\$ 78,000
Design	%	10%	\$ 950,000	%	10%	\$ 3,720,000	%	10%	\$ 78,000
CM/Inspection	%	10%	\$ 950,000	%	10%	\$ 3,720,000	%	10%	\$ 78,000
District Administration	%	2%	\$ 190,000	%	2%	\$ 740,000	%	2%	\$ 20,000
Total			\$ 12,540,000			\$ 49,100,000			\$ 1,034,000

Notes

(1) All costs are in 2022 dollars.

(2) Costs are rounded to the nearest \$100,000 for costs over \$1 million and nearest \$10,000 for costs under \$1 million

Rick Rogers

From: Wohlgemuth, Janet@CCC <Janet.Wohlgemuth@CCC.CA.GOV>
Sent: Thursday, September 28, 2023 10:06 AM
To: Rick Rogers
Cc: Joanis, Brandon@CCC
Subject: San Lorenzo Water District project

Rick
Please find the attached budget that we would be looking at for 8 spikes which would cover 4 months of work
Per spike

Item	Spike hrs x rate	Cost
Labor- 15 person crew	1200 x \$27.00 hours	\$32,400
Staff Overtime	42 hr x \$47	\$2000 (rounded up)
Food		\$1800
Other expenses(fuel, tools)	Fuel, chain, chainsaw parts, bar oil, bar mix, hand tools	\$1800
		Total per spike \$38,000
		8 spikes x \$38,000= \$304,000

Total contract would be \$304,000

If we don't use the entire amount of funds, we will only bill for what is used and the remainder will be a savings to you to report back to FEMA

Let me know if you have any questions
Thanks

Janet Wohlgemuth

Conservation Supervisor
Monterey Bay

30 Aviation Way
Watsonville, CA 95076

P: (831)768-0150 ext 204
C: (831)566-5411

janet.wohlgemuth@ccc.ca.gov
ccc.ca.gov



Hard Work. Low Pay.
Miserable Conditions and More

P & F**DISTRIBUTORS**

511 Tunnel Avenue, Brisbane, California 94005 415-467-4630 Fax 415-467-1010

Spec E & E: 10.18.23
Item: 3a
"HDPE PIPE
IS OUR BUSINESS"
PFDistributors.com

Page: 1

QUOTEQUOTE NUMBER: 0219226
QUOTE DATE: 9/27/2023
SALESPERSON: IIRP
TAX SCHEDULE: CA STACRQUOTED TO: SAN1348
San Lorenzo Valley Water Dist.
13060 Hwy 9
Boulder Creek, CA 95006QUOTED FOR:
San Lorenzo Valley Water Dist.
13060 Hwy 9
Boulder Creek, CA 95006Quote Valid 30 Days
Unless Noted Below
Exp. Date: 10/27/2023

CONFIRM TO: Rick Rogers 831-818-3207

COMMENT: rrogers@slvwd.com

CUSTOMER P.O.	TERMS	SHIP VIA	F.O.B.	
Peavine Supply Line Replace	Net 30 Days	TRUCK	Ship Point	
QTY	UOM		PRICE	AMOUNT
8,360	FT	HDPE Pipe, 8" DR 32.5 x 40	4.500	37,620.00
520	FT	HDPE Pipe, 8" DR 11 x 40	11.500	5,980.00
26	EA	Flange Adapter, 8" DR 11	40.000	1,040.00
26	EA	Epoxy Enc Ring, 8" DR 7	50.000	1,300.00
2	EA	Pulling Head, 8"	1,100.000	2,200.00
15	EA	Coupling EF, Low Pr, 8" DR13.5	120.000	1,800.00

*CUSTOMER IS RESPONSIBLE FOR FINAL TAKEOFF

*Pricing is based on quantities quoted. Quantity changes or partial shipments may result in price changes.
All pipe quoted is subject to prior sale.

*P&F expressly reserves the right to equitably adjust the contract price at any time prior to shipment in the event that material costs increase for reasons beyond the control of P&F.

*Purchaser agrees and accepts that all sales by P&F Distributors are governed by P&F Distributors Terms and Conditions of Sale which supersede all terms and conditions of purchaser.

Net Order:	49,940.00
Less Discount:	0.00
Sales Tax:	4,494.60
Freight:	6,600.00
Order Total:	61,034.60

FAIR LIFTS

Q U O T E

Company Address 2601 Summers Street Ste 300
Kennesaw, GA 30144
United States

Created Date 10/11/2023
Expiration Date 11/11/2023
Quote Number 00059864

Prepared By Mauricio McGarity
Phone (470) 433-0430
Email mauricio@fairlifts.com

Contact Name Rick Rogers
Phone 831-818-3207
Email rrogers@slvwd.com

Bill To Name San Lorenzo Valley Water District
Bill To 13060 California 9
Boulder Creek, CA 95006
United States

Changes in Scope: One Helicopter or Crane Does Not Fit All

Lift quotes vary greatly between projects, based upon a multitude of factors. Keep in mind that small changes in scope might require significant aircraft, crew, etc.. changes, increasing or decreasing your cost.

We have helicopter lifting capacities of >800-24,000 lbs. and crane external load limits of >100 lbs. - 180,000 lbs. through our partnered operators.

Please inform me if there are any changes in weight. If we were able to break these units down further, we could potentially be substantially more cost effective.

On-Site Staging

The client shall ensure a suitable and level staging area (150' x 150'), and a flight path (150' wide) is accessible for the helicopter to operate. If the staging area or set site is sandy or dusty, we'll need a water truck or other form of dust abatement. We can provide this upon request. FAA regulations require that all people, cars and buildings within 150' of the job site be evacuated during lift operation.

Equipment must be prepared as required and ready for helicopter or crane lift(s) prior to our arrival.

Rigging

Aerial Crane

Our standard helicopter rigging includes 50', 100', or 150' Long-Line with Cargo Hook (remotely operable). Unless otherwise stated, the quote assumes you will provide the rigging crew and remaining rigging. Multiple sets of rigging can decrease hover time, increasing our pick per hour efficiency.

Aerial crane services generally include of one (1) helicopter, one (1) experienced pilot, one (1) mechanic, one (1) fueler / safety crew member experienced in part 133 lift operations. This may change, depending upon the needs of the project and type of aerial crane being used.

Ground Crane

Our standard crane rigging includes Spreader Bars, Slings & Shackles. Unless otherwise stated, the quote assumes you will provide the rigging crew and remaining rigging.

Aerial crane services generally include of one (1) ground crane, one (1) experienced operator, and one (1) oiler / crane operations assistant. This may change, depending upon the needs of the project and type of ground crane being used.

Subcontracting & Solicitation

FAIR LIFTS

Q U O T E

FairLifts vets its subcontractors to ensure that only properly licensed, experienced, and qualified operators are enlisted in the service of each client. We provide one source for virtually all aerial and ground crane models in North America, so that our clients have the right solution for every possible project.

Because this is an exhaustive process requiring considerable investment, Client understands and agrees not to affect any arrangement or separate agreement with any of Contractor's subcontractors, employees, agents, vendors, or affiliates performing work on this project, for additional work on this or any other job for a period of at least two years following the completion of this job, or, if greater, the maximum time allowable by law.

Mobilization & Demobilization

Mobilization is based upon the aircraft's current position. There may be a way to reduce mobilization, depending upon your project's timeline and when the helicopter is stationed closer.

Permitting

Aerial Crane

For the direction of the project, the FAA will require evacuations of any property, building, and road within a 150' radius of our flight path. Availability is subject to change. FAA flight plan processing time varies, and advanced planning is recommended to avoid delays.

A plan will be submitted to the Federal Aviation Administration and local department of aviation authorities for approval of the operation. Building evacuations and road closures are the exclusive responsibility of the customer. Upon request and at additional cost, FairLifts can manage road closures and coordination with local authorities.

Ground Crane

State Travel Permits are required for the crane and will be provided. Upon request and at additional cost, Building evacuations and road closures are the exclusive responsibility of the customer. FairLifts can manage road closures and coordination with local authorities.

Pilot-In-Command

The Pilot-In-Command is the final authority on whether a flight will occur or not, and the PIC may cancel flight operations at his or her discretion if safety issues, adverse weather, or other factors are present. All helicopter services are limited to VFR Weather Conditions. Aircraft specific performance limitations based on current altitude and air temperatures.

Client Provided Information

Client agrees that weights and heights listed above are considered limitations which, if exceeded, would prevent Contractor from being able to perform part or all requested services. Prior to payment, client guarantees all metrics and descriptions are accurate in all respects, especially as they pertain to the items being lifted, any structure(s) on or off which they are being lifted, and the areas surrounding the job site.

Without limitation, weights, number of units (lowered or raised), structure height, and other metrics are listed as "up to and including" values. Individual weights are not to exceed the Asset Maximum Capacity (lbs), which is the maximum this particular helicopter or crane can lift for this project.

Until and unless a site visit and review has been completed, quotes are estimations and based upon client provided information. Costs may change upon discovery of new or altered requirements.

Incomplete Performance

If Contractor does not complete performance of the Work due to any cause not within its control, or if the Client shall cancel or reduce the scope of work under this Contract, Client shall pay:

- a) All specified mobilization, demobilization, & preparatory fees if the helicopter arrives at the Job Site ready for work and thereafter does not commence performance of services; or
- b) The Mobilization Fee and the pro-rata proportion of the Minimum Project Price which the completed work bears to the total work to be performed, or the Minimum Contract Price, whichever is greater, if the performance of service has been commenced or cannot be completed due to incorrect client supplied weights or other information; or
- c) Cancellation fee in the amount of 40% of the Minimum Project Price ("Grand Total") if Client shall cancel prior to mobilization.

Aerial Crane: Daily Minimum & Fees

Each additional day required in performance of the Work (beyond the original scope of Work) is subject to a three-hour daily minimum.

Any delays in performance beyond the initial scope of Work, including, without limitation, weather delays (including without limitation high winds), scope of Work alterations, and Client unpreparedness, are subject to the daily minimum in addition to any other amounts applicable to the Work.

Any projects that take place outside of regular working hours Monday-Friday may be charged an additional fee.

Aerial Crane: Additional Flight Hours

Client is responsible for all overages and will be automatically billed upon completion of the flight at 1/10th of the hour.

Project Specifications

Service Scheduling	June 2024	(Up to) # of Units	15
Detail		Lowered	
(Quote) Project Address	37.138472, -122.176806	(Up to) # of Units	15
		Raised	
Structure Type	No Structure: Ground Pick & Placement	Item Weight(s)	1,700 lbs
Structure Height	N/A		
Lifted Item(s) Description	Pallets of tools, pipe, and equipment		

Additional Details & Clarifications

Bell UH-1B -
Max payload - 3500 lbs

Product	Line Item Description	Quantity	Sales Price	Total Price
FAA Flight Plan	Filed FAA Documents/Permits	1.00	\$800.00	\$800.00
Fuel Truck & Mileage		1.00	\$1,650.00	\$1,650.00
Mobilization & Demobilization	Repositioning To and From	1.00	\$6,000.00	\$6,000.00
On Site Time	Hourly Rate	3.00	\$3,000.00	\$9,000.00
Pilot	Required Pilot Count	1.00	\$1,500.00	\$1,500.00
Safety Crew	Signalmen/Mechanic with Comms	1.00	\$1,000.00	\$1,000.00
Grand Total				\$19,950.00

Terms & Conditions

Because we are committed to a superior client experience, each quote fulfills all relevant work parameters. These include, but may not be limited to, helicopter positioning, rigging equipment (long line & hook), pilot(s), liability insurance, load insurance, aircraft, etc. Insurance is provided for relevant parties upon payment receipt. Client's agents, contractors, and assigns are bound by all the same terms to which the customer agrees. Any videography or photography of this project may be used by FairLifts and associated brands.

Should the aircraft be grounded for maintenance, Client will not be charged for the time the aircraft is inoperable. When providing their own rigging crew, the client assumes all liability for damage to its equipment, materials, or structures caused by faulty rigging or hook procedures. The Client will indemnify Fairlifts against any damage caused by downwash from the helicopter.

Client will obtain and pay for any other state, county, and city permits that may be required. Should police, fire or security personnel be required on the site for any reason including traffic control, Client will arrange and pay these costs.

Rick Rogers

From: Carly Blanchard
Sent: Tuesday, October 10, 2023 10:09 AM
To: Rick Rogers
Subject: RE: Peavine Replacement Cost Estimates

Hi Rick,

I pulled the table below from our 2020 Lyon Slide Feasibility report which triggers the same permitting requirements likely in the Peavine Project. If all are triggered we are looking at a rough cost of \$400,000

Agency	Authorization Required/Permit Type	Typical Timeline	Cost Implications (permitting + mitigation)	Comments
USACE	Clean Water Act Section 404 NWP	3-6 months	\$50,000	Waters of the U.S.
USFWS	ESA Section 7/10 Consultation Incidental Take Permit	9-12 months	\$50,000	Potentially for CRLF depends on final design (Alt. 1)
CDFW	CGFC Section 2018 Incidental Take Permit	9-12 months	\$100,000	Potentially for western bumble bee, FYLF Dudley's lousewort
CDFW	CGFC Section 1600 Lake or Streambed Alteration Agreement (LSAA)	3-6 months	\$10,000	Stream and riparian; sensitive natural community; depends on final design (Alt. 1)
RWQCB (Central Coast)	Clean Water Act Section 401 Water Quality Cert. (WQC)	9-12 months	\$100,000	Waters of the State; depends on final design (Alt. 1)
Santa Cruz County	County Development Permit	3-6 months	TBD	Riparian impacts

Additional costs:

CEQA ~\$85K

Rare plant surveys and preparation of biological resources report ~\$10K

Cultural Records Review and AB 52 Consultation ~\$10K

Thanks,

Carly Blanchard

Environmental Programs Manager

O: 831-338-2153 D: 831-430-4639

C: 831-818-0315

cblanchard@slvwd.com

From: Rick Rogers <rrogers@slvwd.com>
Sent: Tuesday, October 10, 2023 7:33 AM
To: Carly Blanchard <cblanchard@slvwd.com>
Subject: Peavine Replacement Cost Estimates

Rick Rogers

From: Carly Blanchard
Sent: Tuesday, October 10, 2023 8:38 AM
To: Rick Rogers
Subject: Fw: Peavine Pipeline Hazard Tree Removal Cost Estimate

See cost estimates below for Peavine tree work.

Thanks,
Carly Blanchard
Environmental Programs Manager
O: [831-338-2153](tel:831-338-2153) D: [831-430-4639](tel:831-430-4639)
C: [831-222-0275](tel:831-222-0275)
cblanchard@slvwd.com

From: Mike Powers <mike.powersforestry@gmail.com>
Sent: Tuesday, October 10, 2023 6:35 AM
To: Carly Blanchard <cblanchard@slvwd.com>
Subject: Peavine Pipeline Hazard Tree Removal Cost Estimate

Hi Carly, This is a rough estimate of costs to fall, limb and treat the resulting slash for the 520+/- trees identified by the Peavine Pipeline tree survey as either dead and/or hazardous that need to be mitigated.

Dead/Hazard Tree Falling

5 Timber Fallers (\$185/hr x 40 hours/day) = \$7,400/day

Per Diem and Vehicle Expense (\$200/person/day per-diem and 5 vehicles x \$75/vehicle/day) = \$1,375/day

Estimated 8 days to fall, limb and buck marked trees. 8 days x \$8775 daily cost = **\$70,200.00**

Slash Loop and Scatter

12 Person Chainsaw Crew (\$95/hr x 96 hours/day) = \$9,120/day

Per Diem and Vehicle Expense (\$200/person/day per-diem and 3 vehicles x \$75/vehicle/day) = \$2,625/day

Estimated 8 days to loop and scatter slash from felled trees. 8 days x \$11,745 daily cost = **\$93,960.00**

RPF Forester Supervision

RPF Field (\$135/hr x 8 hours/day) = \$1,080.00

Per Diem and Vehicle Expense (\$200/day per-diem and vehicle expense \$75/day) = \$275/day

Estimated 12 days of supervision x \$1355 daily cost = **\$16,260.00**

Total Estimated Cost = \$180,420.00

--
Mike Powers, RPF #2690; ISA Cert Arborist WE-8135A TRAQ



"Some of the measures included in this email are contemplated as additional precautionary measures intended to further reduce the risk of future wildfire ignitions."

Carly,
I need cost estimates regarding Peavine for the following:

- Hazardous Tree Removal
- Environmental Review
- Environmental Permitting
- Other Thoughts

Rick

Rick Rogers
District Manager
SLV Water District
831-430-4624





Golden State Communications, Inc.
978 Rincon Circle
San Jose, CA 95131
US

Sales Quote

Sales Quote Number: SO12769
Sales Quote Date: 9/29/2023
Requested Delivery Date
Promised Delivery Date
Quote Expiration Date: 10/31/23
Page: 1

Sell

To: San Lorenzo Valley Water District
Scott Mattoch
13060 Highway 9
BOULDER CREEK, CA 95006
US

Ship

To: San Lorenzo Valley Water District
Scott Mattoch
13060 Highway 9
BOULDER CREEK, CA 95006
US

Ship Via

Terms Net 30 Days

Customer ID: CU00480
SalesPerson: Matt Igel - NB

Item No.	Description	Unit	Quantity	Unit Price	Total Price
AAH56JDN9RA1AN	XPR 7550e Two-Way Radio VHF Includes antenna, battery, charger, clip	Each	7	1,325.00	9,275.00
00-SHIP	Shipping	Each	1	65.00	65.00

Amount Subject to Sales Tax: 9,275.00
Amount Exempt from Sales Tax: 65.00

Subtotal: 9,340.00
Invoice Discount: 0.00
Total Sales Tax: 834.75

Total: 10,174.75

Rick Rogers

From: Scott Mattoch
Sent: Wednesday, September 27, 2023 1:32 PM
To: Rick Rogers
Subject: Utility Vehicles - used

Rick,

This is a shot of the last equipment list I got from United Rentals for your reference.

Utility Carts			
046	955-1119	UTV 4WD DSL 2SEAT ROPS	108170
606	955-1119	UTV 4WD DSL 2SEAT ROPS	107957
050	955-1123	UTV 4WD DSL 4SEAT CAB	105633
549	955-1123	UTV 4WD DSL 4SEAT CAB	107787
549	955-1124	UTV 4WD DSL 4SEAT ROPS	106920
549	955-1126	UTV 4WD DSL 2SEAT CAB	108601
Welders			

BRANCH 230
 1835 SOQUEL DR
 SANTA CRUZ CA 95065-1847
 831-475-2125

225204855

Job Site

SAN LORENZO VALLEY WATER DIST
 13060 HIGHWAY 9
 BOULDER CREEK CA 95006-9119

Office: 831-338-2153 Cell: 831-818-3211

SAN LORENZO VALLEY WATER
 13060 HIGHWAY 9
 BOULDER CREEK CA 95006-9119

Customer # : 273219
 Quote Date : 09/27/23
 Estimated Out : 10/02/23 12:00 PM
 Estimated In : 10/30/23 12:00 PM
 UR Job Loc : 13060 HIGHWAY 9, BOU
 UR Job # : 11
 Customer Job ID: BCWW
 P.O. # : TBD
 Ordered By : SCOTT MATTOCH
 Written By : RYAN RICHARDS
 Salesperson : RYAN RICHARDS

**This is not an invoice
 Please do not pay from this document**

RENTAL ITEMS:								
Qty	Equipment	Description	Minimum	Day	Week	4 Week	Estimated Amt.	
1	9551118	UTV 4WD GAS 4SEAT CAB		138.00	320.00	1,016.00		1,016.00
							Rental Subtotal:	1,016.00
SALES/MISCELLANEOUS ITEMS:								
Qty	Item		Price		Unit of Measure		Extended Amt.	
1	DELIVERY CHARGE		213.540		EACH			213.54
1	PICKUP CHARGE		213.540		EACH			213.54
							Sales/Misc Subtotal:	427.08
							Agreement Subtotal:	1,443.08
							Tax:	110.66
							Estimated Total:	1,553.74

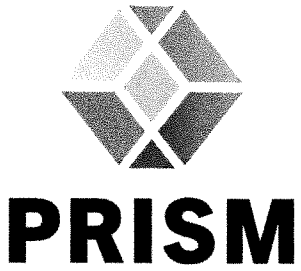
COMMENTS/NOTES:

CONTACT: SCOTT MATTOCH
 CELL#: 831-818-3211

TO SCHEDULE EQUIPMENT FOR PICKUP, CALL 800-UR-RENTS (800-877-3687)
 WE ARE AVAILABLE 24/7 TO SUPPLY YOU WITH A CONFIRMATION #
 IN ORDER TO CLOSE THIS CONTRACT

This proposal may be withdrawn if not accepted within 30 days. The above referenced Rental Protection Plan, environmental, and tax charges are estimates and are subject to change.

NOTICE: This is not a rental agreement. The rental of equipment and any items listed above is subject to availability and subject to the terms and conditions of the Rental and Service Agreement, which are available at <https://www.unitedrentals.com/legal/rental-service-terms-US> and which are incorporated herein by reference. A COPY OF THE RENTAL AND SERVICE AGREEMENT TERMS ARE AVAILABLE IN PAPER FORM UPON REQUEST.



ENTERPRISE RISK CONSULTANTS SERVICES e-guide

Questions,
or have someone
to recommend?



Your Resource for Contracting Experienced
Risk Management Personnel



JULY
2023

www.prismrisk.gov

INTRODUCTION

Hello,

Thank you for your interest in the PRISM's Enterprise Risk Consultants (ERC) Service. Rest assured that our pool of consultants are ready, willing and able to assist with your special project work. Each consultant has undergone a comprehensive evaluation process, to include review by the Member Services Committee, who themselves have diverse backgrounds, including Risk Managers, Finance, Human Resources, Risk Control, and other skill sets, and finally, a background check conducted by an independent background check firm.

The Consultants are highly-experienced individuals with a wide scope of risk management expertise in the following areas:

- Accounting/Risk Finance
- Claims Management
- Human Resources
- Information Technology
- Risk Control
- Risk Management

Many are retired public agency professionals or private sector consultants who are able to bring tremendous experience and expertise to your short-term project.

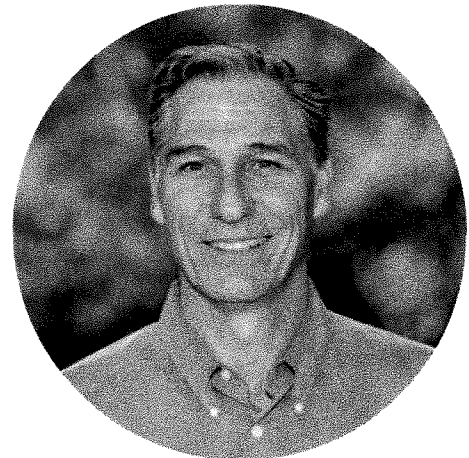
The consultants contract with PRISM and are fully insured. This allows the consultant to bill PRISM directly for services rendered to the participating member, negating the member's need to otherwise go through their own Request for Proposal (RFP) process for similar services.

Please have a look at the e-Guide and let us know if we can help you with a project, or if you have any questions.

Sincerely,



Rick Brush
Chief Member Services Officer



MEMO

To: Engineering and Environmental Committee
From: District Manager
Prepared By: Director of Operations
SUBJECT: SYSTEM WIDE WATER LINE LEAK DETECTION ANALYSIS
DATE: October 18, 2023

RECOMMENDATION

It is recommended that the Engineering Committee review this memo and discuss the District's leak detection program moving forward.

BACKGROUND

In Fiscal Year 2022-23 the District undertook a full system wide leak detection program finding 18 potential leak noises. Leak detection was done over a three-week period. Staff investigated all 18 locations, a total of 6 of the locations staff identified and fixed leaks totaling 7.5 gpm. The other 12 locations no leaks were found and it was determined to be system and or customer usage creating the noise at the time of leak detection.

In Fiscal Year 2020-21 the District undertook a full system wide leak detection program finding 27 leaks. Leak detection was done over a three-week period.

In Fiscal Year 2018-19 the District undertook a full system wide leak detection program finding 40 leaks Leak detection was done over a four-week period.

In Fiscal Year 2014-15 the District undertook a full system wide leak detection program finding 39 leaks. Leak detection was done over a four-week period.

The District contracted with Utility Services Associates (USA), Seattle, Washington. Leak detection was performed using state of the art acoustical listening devices and digital correlation technology.

The leak detection projects were broken down into two different phases.

1. Survey Phase - Sounding of appurtenances and recording all leak anomalies detected for further investigation.

2. Pinpointing Phase - pinpoint all anomalies that were detected during the survey phase.

After pinpointing District staff returned and facilitated repairs. Leak detection project is considered a success. AWWA industries standard is to complete leak detection of a water system every 3 to 5 years.

The incremental cost for every million gallons of water is approximately \$904. This number is derived from the Districts AWWA water loss audit. It includes pumping/power cost, chemical cost, lab cost, and outside water analysis cost.

All leaks identified in the 2023 leak detection program have been investigated with no findings and or fixed. Many of the leaks identified in the program were in meter and valve boxes. This is a frequently normal area for leaks to be found as these valves have packing area's built in to them for moving parts. These leaks do take extended periods of time to surface and or flow out of the boxes at such low GPM's. Some of the leaks also identified had been reported and or staff had previous knowledge of the leak. It is in the contractor's protocol to report any identified leak in the system weather the leak is known about or not.

Cost for leak detection

2023 Contract	\$23,386 = 15 Days	\$12,300	\$35,686
2021 Contract	\$19,557 = 15 Days	\$9,600	\$29,157
2018 Contract	\$25,306 = 20 Days	\$12,400	\$37,706
2014 Contract	\$24,536 = 20 Days	\$12,000	\$36,536

FINAL REPORT

WATER LEAK DETECTION PROJECT

Project Dates:

06/05/2023 through 06/30/2023



Project Location:

San Lorenzo Valley Water District
Boulder Creek, CA



Prepared by:

Utility Services Associates, LLC
916 W. Center St.
Kalispell, MT 59901

TABLE OF CONTENTS

COVER LETTER

EXECUTIVE SUMMARY

PROJECT OBSERVATIONS

SURVEY PHASE REVIEW

PINPOINTING PHASE REVIEW

LEAK REPORTS

CONCLUSION

COVER LETTER



July 10, 2023

San Lorenzo Valley Water District
Attn: James Furtado
13060 Hwy. 9
Boulder Creek, CA 95006

Re: June 2023 Water Leak Detection Survey and Pinpointing Project

Dear Mr. Furtado:

Utility Services Associates, LLC, (USA) is pleased to submit the enclosed Final Report on leak detection services recently completed.

The information contained in this Final Report details the procedures and results specific to this project. When applicable, recommendations have been made concerning the best approach for the repair of leaks detected and preparation for future leak detection projects.

As you review this Final Report, please pay close attention to the Leak Consultant's remarks and field observations in the Project Observation section of this report. These may assist you in determining the best course of action regarding specific leaks.

At times specific individual Leak Reports may differ in the Final Report from those provided during the course of the project. These changes, usually insignificant, generally pertain to the manner in which we report leaks and do not alter the methods used or results of pinpointing.

We strongly suggest you contact us prior to excavating any leak that we have labeled with "CAUTION" for further explanation.

This leak detection project is productive since we pinpointed leakage that, when repaired, can reduce your water loss, saving San Lorenzo Valley Water District dollars now and in the future. We appreciate your confidence in USA. If you have any questions, call us at (877) 585-5325.

Sincerely,



Cory Simonson
President



EXECUTIVE SUMMARY

LEAK DETECTION EXECUTIVE SUMMARY

From June 5, 2023 through June 30, 2023, USA performed a leak survey for **San Lorenzo Valley Water District in Boulder Creek, CA**. Our Water Loss Consultant, Eric Kelsay, used and appreciated the information provided by Ben, Bryan and Jake to expedite and provide an accurate survey. The tables below detail the information gathered.

Time Spent on Project	
Surveying:	108.3 Hr
Pinpointing:	7.6 Hr
Other Time:	4.1 Hr
Total Time:	120 Hr

Total Areas Surveyed	
Total Distance in Miles	180.9186
Total Distance in feet	955,250
The mileage was estimated by the Water Loss Consultant and may not match maps.	

Access Points Contacted	
Hydrants	620
Valves	961
Services	2,498
Other	0
Total	4,079

Leak Type Noises Detected	
Hydrants	6
Valves	7
Services	4
Other	1
Total	18

Leaks Pinpointed	
Main	2
Valve	3
Hydrant	1
Service Line	1
Service Connection	3
Curbstop	0
Other	1
Total	11

Total Water Loss Identified	
Gallons Per Minute (GPM):	44.50
Gallons Per Day:	64,080
Gallons Per Month:	1,949,100
Gallons Per Year:	23,389,200

Unidentified Water Loss	
Faulty Meters	0
Unidentified Leaks	1
Possible Consumer Side Leaks	0

This project was divided into two phases; the survey phase and the pinpointing phase. The following pages outline exactly how those two phases progressed and the results of each. Any leaks pinpointed will be detailed in the attached Leak Reports.

PROJECT OBSERVATIONS

Project Observations

San Lorenzo Valley Water District, CA

Technician: Eric Kelsay

GENERAL

Utility Services Associates (USA) Water Loss Consultant Eric Kelsay recently completed a fifteen (15) day water leak detection project for the San Lorenzo Valley Water District, CA (Utility). The fieldwork portion of the project began on June 5th, 2023, and was completed on June 30th, 2023.

The information listed below is based on field data generated by Eric during the fieldwork.

PROJECT BACKGROUND

USA was hired to conduct a water leak survey of as much of the City's distribution system as possible over the fifteen (15) day period. Based on system variables, both standard and point-to-point survey techniques were employed.

SPECIFICS

The project was broken down into two different phases:

1. **Survey Phase** – sounding of appurtenances and recording all leak anomalies detected for further investigation. Appurtenances were selected based on system variables, location, and accessibility.
2. **Pinpointing Phase** – pinpointing all anomalies that were detected during the survey phase.

SURVEY PHASE NOTES

There are several variables that impact how well a leak sound will carry. The variables include but are not limited to, the following:

- Pipe Type: Sound carries best in metallic-based pipe material and worst in plastic-based pipe material
- Pipe Size: Velocity or sound carry decreases as pipe size increases
- Pressure: Sound carries better as system pressure increases
- Installation: The soil condition impacts how well leak sound carries. Factors to consider are soil type and moisture content.
- Leak Type: The leak type and size will impact how well a leak sound will carry.

Sound carried well throughout the system allowing for a complete and thorough survey to be conducted. During the project, we were able to survey approximately one hundred eighty-one (180.9) miles of the system.

The standard survey technique used on non-plastic-based pipe included the sounding of system appurtenances (hydrants, valves, and service shut-offs) at intervals of approximately 350' in most cases. Where PVC system was surveyed, a point-to-point technique was used. This technique included the sounding of all available appurtenances. This is necessary as plastic-based water lines have significantly slower velocity and muffling characteristics that prevent leak sound from carrying well.

As the survey progressed, Eric documented eighteen (18) potential leak anomalies for further inspection and pinpointing during the pinpointing phase. This multi-phased technique has proven to be the most efficient way to reduce the time spent pinpointing sounds that result from service draw or other ambient interference.

The only unresolved, non-leak issue indicated at the end of the project was a jumper pipe (un-metered) in a meter box at 870 Woodland Dr. This is not leaking but may be a non-revenue water loss.

SYSTEM OBSERVATIONS FIELD NOTES

The entire distribution system was leak surveyed, beginning at the North point of the system and working South through the map. Many of the booster pumps and pressure reducers were active and leak-free during the leak survey. The survey went well due to clear markings of meters with flags and paint, which eliminated meter location delays. Most all valves were clear of debris and easily accessible during the survey.

PINPOINTING PHASE NOTES

Upon secondary verification of the documented leak anomalies, we were able to pinpoint eleven (11) water system leaks and one (1) undefined leak. For details and a diagram for each leak, please see the Leak Report section of this report.

TECHNICIAN RECOMMENDATIONS

We recommend a continued focus on water loss and real loss reduction. Once repairs are made, note any observed differences in our loss estimates versus visual confirmation estimates. It is possible that leak estimates are off dramatically, so the impact on your water loss tracking efforts will be impacted.

CONCLUSION

We would like to thank Ben, Jake, and Bryan for their field assistance. Their hard work and system knowledge proved invaluable. We look forward to working with the San Lorenzo Valley Water District on their future non-revenue water loss reduction projects.

Eric Kelsay
Water Loss Consultant

SURVEY PHASE REVIEW

SURVEY PHASE REVIEW (Water Distribution Lines)

The first step in our survey was to review the distribution maps of the system for familiarization of the pipe network and available appurtenances to be used for contact points.

As the leak survey progressed, we determined the distances that even quiet leak type sounds traveled in various pipe materials, pipe sizes and pressure zones in each area of the system. This might have been done by slightly turning on fire hydrants, hose bibs, etc., creating a simulated, quiet leak sound. Appurtenances in that area were then checked with a sound amplification instrument to see how far the simulated leak sounds traveled, thus determining how often we would make contact with appurtenances in a given section of the water distribution system. In most areas, contact was made with pipe appurtenances at intervals no greater than 300 feet where contact points were available and accessible at pre-determined distances as noted in Paragraph B (whichever distance is necessary to obtain complete coverage). This allowed for even more quiet leaks to be located. Whenever we surveyed PVC lines, all available appurtenances were contacted.

We then conducted a comprehensive survey by making physical contact with all available main line appurtenances (valves, hydrants, etc.) and necessary customer services. USA used a sonic leak detection amplification instrument designed for this purpose.

Appurtenances Surveyed

Hydrant	620
Valves	961
Services	2,498
Other	0
Total	4,079

When normal contact points were not available or could not be created within a reasonable distance, we made an attempt to use a sonic ground listening instrument to make physical ground contact at intervals no greater than 6 feet directly over the pipe. If conditions did not allow this procedure our Leak Consultant advised you at time of project and notes of such are included in the Project Observations. Ground listening devices are employed when ground cover is pavement, cement or similar hard surface.

When ground cover was not a hard surface and normal contact points were not available, we made an attempt to use probe rods or a specially designed sounding plate at 6-foot intervals. A sound amplification instrument with 3VG or greater transducer was employed in conjunction with this equipment, directly over the pipe. If conditions did not allow this procedure our Leak Consultant advised you at time of project and was detailed in the Project Observations section of this Final Report. Direct contact to the main line at intervals outlined in Preparation for Service resulted in the most thorough survey.

Areas Surveyed

Street	From	To	Distance
San Lorenzo Park	Northwest end of line	Ramona Woods	8,700
Ramona Woods	Hwy 9	San Lorenzo Woods	6,200
San Lorenzo Woods	Ramona Woods	Riverside Grove	3,100
Riverside Grove	Teilh Rd	Bernstein Dr	14,800
Mitchell Dr	Hwy 9	East end of line - Tank	2,400
Redwood Grove	Hwy 9	Kings Creek Rd	7,100
Redwood Grove area	Buckknoll Ln	Cresta Dr	68,200
Hwy 9	Mitchell Dr	Brimblecom Rd	9,000
Hwy 9	Brimblecom Rd	Bear Creek Rd	8,700
Wildwood area	Brimblecom Rd	Shadeland Rd	41,000
Bear Creek Estates	Fernwood	Bear Creek Tank	10,600
Ralston Zone	Bear Creek Rd	West end of line	2,100
Redwood Park	Hwy 9	Through loop	31,900
Big Basin Hwy	Hwy 9	North end of line	14,200
Lyon Zone	Redwood Ave	North end of line	41,100
Nina Zone	Highland Dr	South end of line	10,500
Highland Zone	Fairview Booster	Nina Booster	12,000
Boulder Creek	Bear Creek Rd	Irwin Booster	38,100
Brookdale	Irwin Booster	Ben Lomond	26,100
Ben Lomond	Brookdale Zone	Glen Arbor	38,000
Redwood Park	Hwy 9	Through loop	27,400
Glen Arbor	Redwood Park	Brackney	46,400
Brackney	Glen Arbor	Felton	17,300
Olympia	Glen Arbor	E Zayante Rd	68,150
Felton	Brackney	Pine Tank	88,500
Scotts Valley	Manana Woods	South end of line	61,000
Manana Woods	Roaring Camp Rd	Well #7	18,800
E Lompico	Lompico Rd	East end of line	35,800
Zayante	Lompico Rd	East end of line	36,100
W Lompico	Lompico Rd	West end of line	53,600
Hwy 9	San Lorenzo Park	Old Big Trees Rd	108,400
Total Area Surveyed in Feet			955,250
Total Area Surveyed in Miles			180.9186

A detailed report of decibel levels at suspected leak sound locations and observations were compiled during the survey for reinvestigation and possible pinpointing at a later time. This reinvestigation increased the speed of the survey and eliminated correlating on most false leak sounds.

Leak Type Noises Detected

Contact Points	Noises Detected
Hydrant	6
Valves	7
Services	4
Other	1
Total	18

All indications of leaks found during the survey were verified a second time, after which, the leaks were pinpointed with a computer-based sound correlator when possible. Pinpointing information can be found in the Pinpointing and Leak Reports Sections.

End of Section

PINPOINTING PHASE REVIEW

PINPOINTING PHASE REVIEW (Water Distribution Lines)

All indications of leaks found during the survey were verified a second time, after which, the leaks were pinpointed with a computer-based sound correlator when possible. Pinpointing leak locations through interpretation of sound intensity, either by ear, decibel metering or other like methods was not used when contact points were available for use with the correlator. However, ground listening devices were used as a quick double check on pinpointed leaks.

The equipment used did not normally require valves to be operated during surveying and pinpointing. However, on occasion, services or valves were operated to eliminate service draw noises or to change velocity noise.

The correlator equipment used had the capability to prompt the operator to input the variables when different pipe sizes and/or pipe material were encountered in the same span to be investigated. This is necessary to ensure accuracy of results based on the automatic computation of the correct leak sound velocity in leak pinpointing operations. Our correlators have the capability of correlating up to seven various pipe sizes and types at one time in a given space. To ensure effective performance in all field environments encountered in the distribution system (i.e. traffic noise, draw, pump operation, industrial noise, etc.), the correlator equipment provides 16 auto filter options and/or infinite manual filter options.

We provided a copy of leak reports, when pinpointed, which included leak locations and estimated GPM loss.

Leaks Pinpointed

Number	Leak Type	Location	GPM
1	Service Line	225 Meadow Dr.	1.00
2	Main	433 Manzanita Ave.	3.00
3	Service Connection	195 Sunbeam Ave.	3.00
4	Service Connection	130 A N. Sequoia Rd.	2.00
5	Valve	127 Forest St.	3.00
6	Valve	168 Willowbrook Dr.	1.00
7	Hydrant	140 Woodland Dr.	0.50
8	Main	490 Balch Way	5.00
9	Other	11910 Clear Creek Rd.	5.00
10	Valve	1395 Country Club Dr.	1.00
11	Service Connection	130 Pacific St. (estimated address)	20.00
Total			44.50

These leak reports also included a leak repair priority classification. These classifications are as follows:

Class I Any leak which is hazardous in terms of potential undermining, possibly resulting in surface collapse, encroachment and/or damage to nearby utilities, commercial or private properties or leaks severe enough to warrant immediate repair.

Class II All leaks that display water losses significant enough to be monitored on a regular repair schedule.

Class III Relatively small leaks that should be repaired as workload permits.

Repair Priority

Number	Leak Type	Location	GPM
11	Service Connection	130 Pacific St. (estimated address)	20.00
Total Class I			20.00

Number	Leak Type	Location	GPM
5	Valve	127 Forest St.	3.00
8	Main	490 Balch Way	5.00
9	Other	11910 Clear Creek Rd.	5.00
Total Class II			13.00

Number	Leak Type	Location	GPM
1	Service Line	225 Meadow Dr.	1.00
2	Main	433 Manzanita Ave.	3.00
3	Service Connection	195 Sunbeam Ave.	3.00
4	Service Connection	130 A N. Sequoia Rd.	2.00
6	Valve	168 Willowbrook Dr.	1.00
7	Hydrant	140 Woodland Dr.	0.50
10	Valve	1395 Country Club Dr.	1.00
Total Class III			11.50

Whenever any of the leaks detected by USA were repaired prior to completion of the field work, we gave San Lorenzo Valley Water District the option to have that section of the system re-surveyed to be sure no very quiet leaks were missed due to an overpowering noisy leak sound.

Please note that leakage that was detected and pinpointed may be larger or smaller than estimated. Estimates are based on several variables including type and size of pipe, pressure, and interpretation of correlation filter results.

It should be noted that we have listed one area as "Undefined". This is an area where we believe one or more leaks exist, however, after spending considerable time at each location, we could not pinpoint the suspect leakage. This may be due to one or more of many different variables including poor sound travel, limited number of appurtenances, etc. For further information and/or assistance, please contact our main office.

Undefined Leaks

Leak Location	Notes
360 Blue Ridge Dr.	Good leak noise detected on meter. Area fully ground mic'd with no solid results. Leak appears to be small at the present time. No visible problems throughout area.

End of Section

LEAK REPORTS



LEAK REPORT

Leak #:	1
Date:	June 8, 2023
Map #:	
Coordinates	

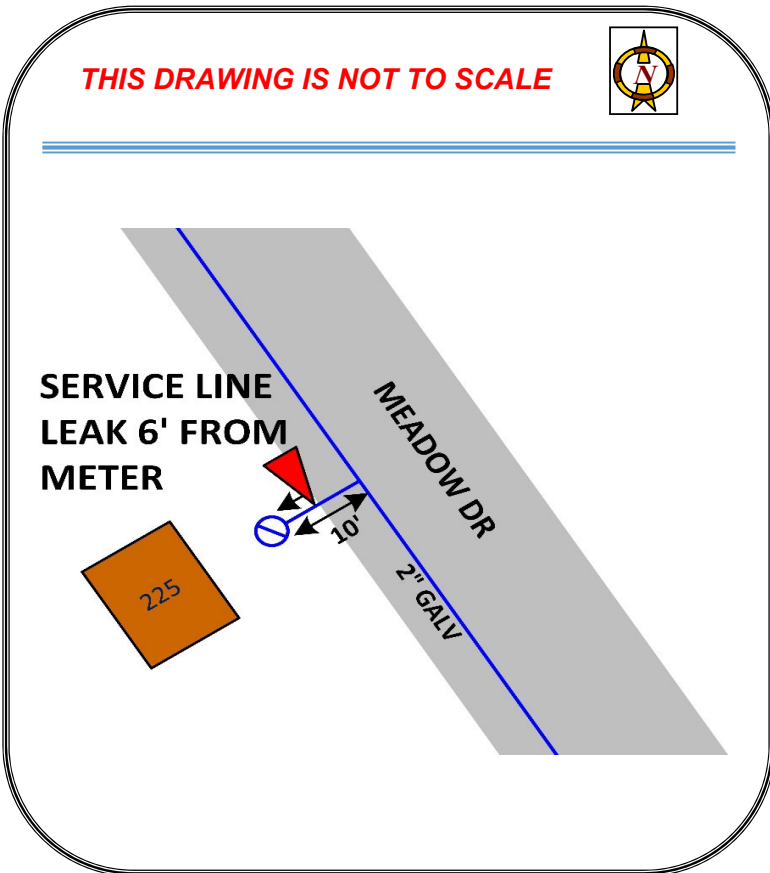
Leak Type
SERVICE LINE
Leak Address
225 MEADOW DR

Client: San Lorenzo Valley Water District

Agreement: 23027

REMARKS
 VISIBLE LEAK IN DITCH ON EXPOSED SERVICE LINE. GALVANIZED SERVICE LINE IS HEAVILY CORRODED AND SHOULD BE REPLACED SOON. LEAK WORSENERD WHEN PRIMARY REPAIRS WERE ATTEMPTED.

Action(s) Taken: _____
 Recommendation(s): REPAIR / REPLACE



EQUIPMENT USED	
	S-30

LEAK INFORMATION	
Leak Consultant:	EK
Leak Class:	III
Leak Rate (GPM):	1.00
Cover Type:	SOIL
Site Marked:	NO
Mins. Pinpointing:	30



Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"

Water Loss (gallons)	
Daily:	1,440
Weekly:	10,080
Monthly:	43,800
Annual:	525,600



LEAK REPORT

Leak #:	2
Date:	<i>June 8, 2023</i>
Map #:	
Coordinates	

Leak Type	MAIN
Leak Address	433 MANZANITA AVE

Client: San Lorenzo Valley Water District

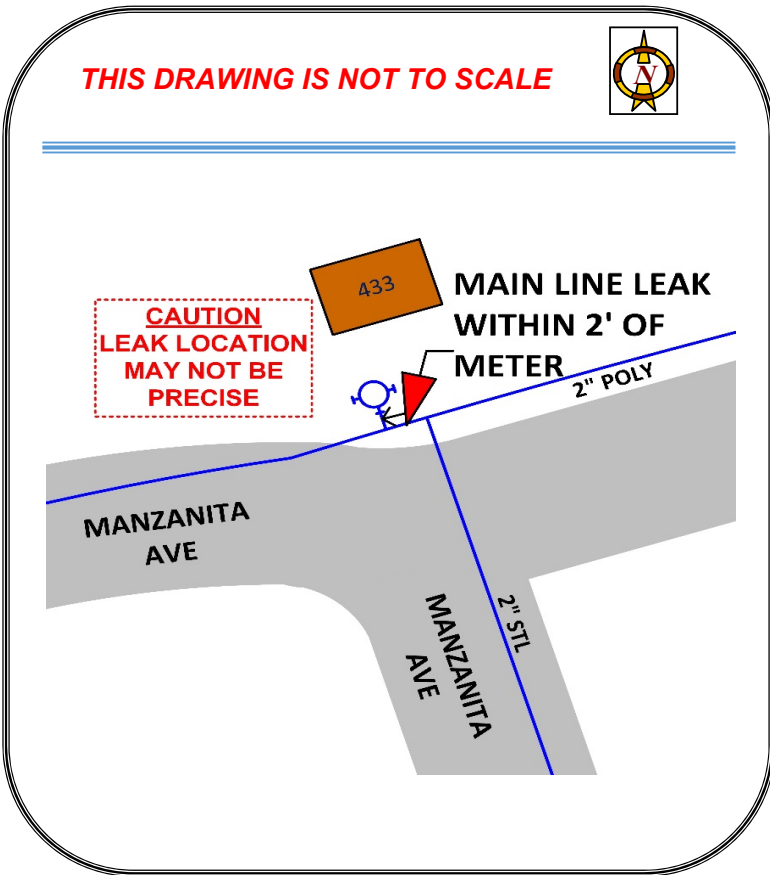
Agreement: 23027

REMARKS

UNCERTAIN OF EXACT MAIN LINE LAY OUT. LEAK IS WITHIN 2' OF WHARF HYDRANT. THIS IS AN EXTIMATED DRAWING OF THE AREA.

Action(s) Taken: _____

Recommendation(s): EXCAVATE & REPAIR



EQUIPMENT USED	
	<i>S-30</i>

LEAK INFORMATION	
Leak Consultant:	<i>EK</i>
Leak Class:	<i>III</i>
Leak Rate (GPM):	<i>3.00</i>
Cover Type:	<i>GRAVEL</i>
Site Marked:	<i>NO</i>
Mins. Pinpointing:	<i>30</i>



Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"

Water Loss (gallons)	
Daily:	<i>4,320</i>
Weekly:	<i>30,240</i>
Monthly:	<i>131,400</i>
Annual:	<i>1,576,800</i>



LEAK REPORT

Leak #:	3
Date:	<i>June 8, 2023</i>
Map #:	
Coordinates	

Leak Type
SERVICE CONNECTION
Leak Address
195 SUNBEAM AVE

Client: San Lorenzo Valley Water District

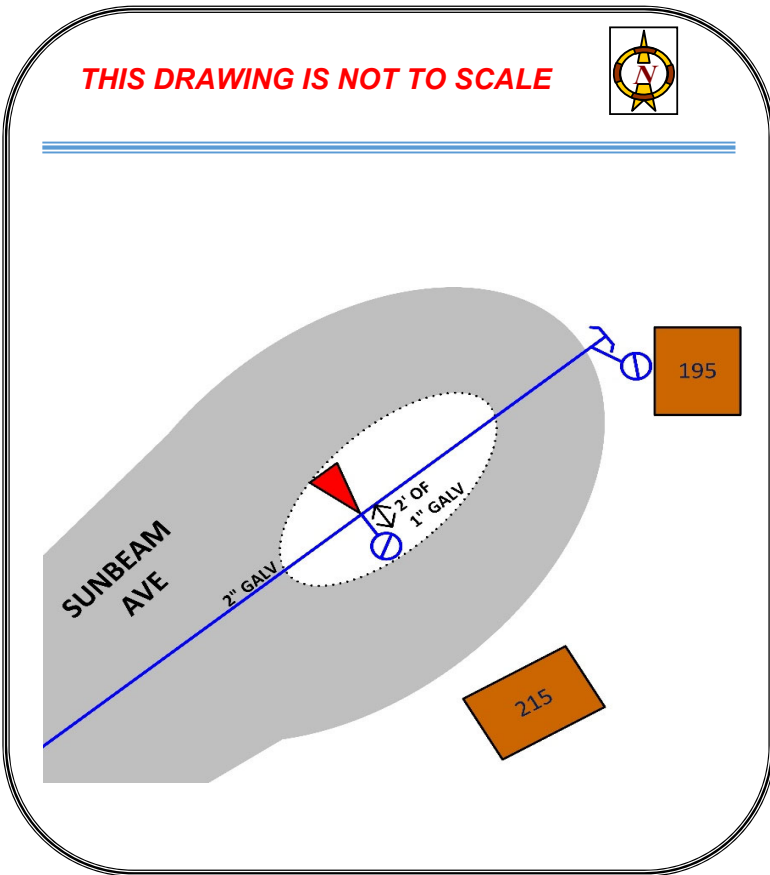
Agreement: 23027

REMARKS

MOIST SOIL IN AREA DOWNHILL OF METER. CONFIRMED WITH PROBE ROD.

Action(s) Taken: _____

Recommendation(s): REPAIR / REPLACE



EQUIPMENT USED	
	<i>S-30</i>
	<i>PROBE ROD</i>

LEAK INFORMATION	
Leak Consultant:	<i>EK</i>
Leak Class:	<i>III</i>
Leak Rate (GPM):	<i>3.00</i>
Cover Type:	<i>GRAVEL</i>
Site Marked:	<i>NO</i>
Mins. Pinpointing:	<i>45</i>



Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"

Water Loss (gallons)	
Daily:	<i>4,320</i>
Weekly:	<i>30,240</i>
Monthly:	<i>131,400</i>
Annual:	<i>1,576,800</i>



LEAK REPORT

Leak #:	4
Date:	June 29, 2023
Map #:	
Coordinates	

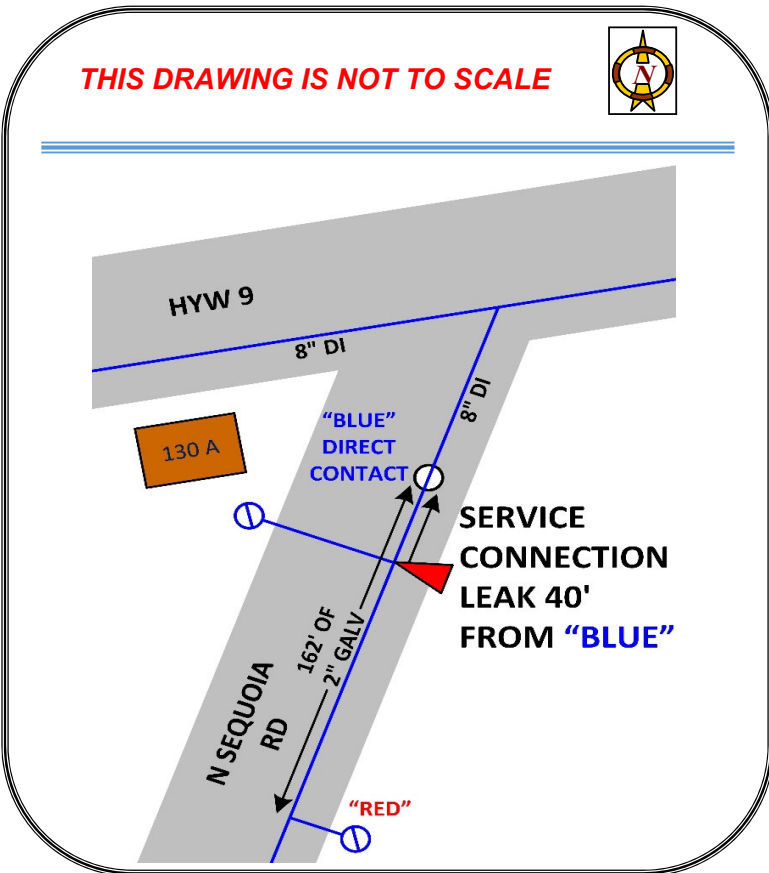
Leak Type
SERVICE CONNECTION
Leak Address
130 A N SEQUOIA RD

Client: San Lorenzo Valley Water District

Agreement: 23027

REMARKS
 PINPOINTED SERVICE CONNECTION LEAK WITH EXCELLENT CORRELATION. SOIL IS MOIST IN PINPOINTED AREA.

Action(s) Taken: _____
 Recommendation(s): REPAIR / REPLACE



EQUIPMENT USED	
	S-30
	LC-2500

LEAK INFORMATION	
Leak Consultant:	EK
Leak Class:	III
Leak Rate (GPM):	2.00
Cover Type:	GRAVEL
Site Marked:	NO
Mins. Pinpointing:	60



Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"
38	A	123	39

Water Loss (gallons)	
Daily:	2,880
Weekly:	20,160
Monthly:	87,600
Annual:	1,051,200



LEAK REPORT

Leak #:	5
Date:	June 29, 2023
Map #:	
Coordinates	

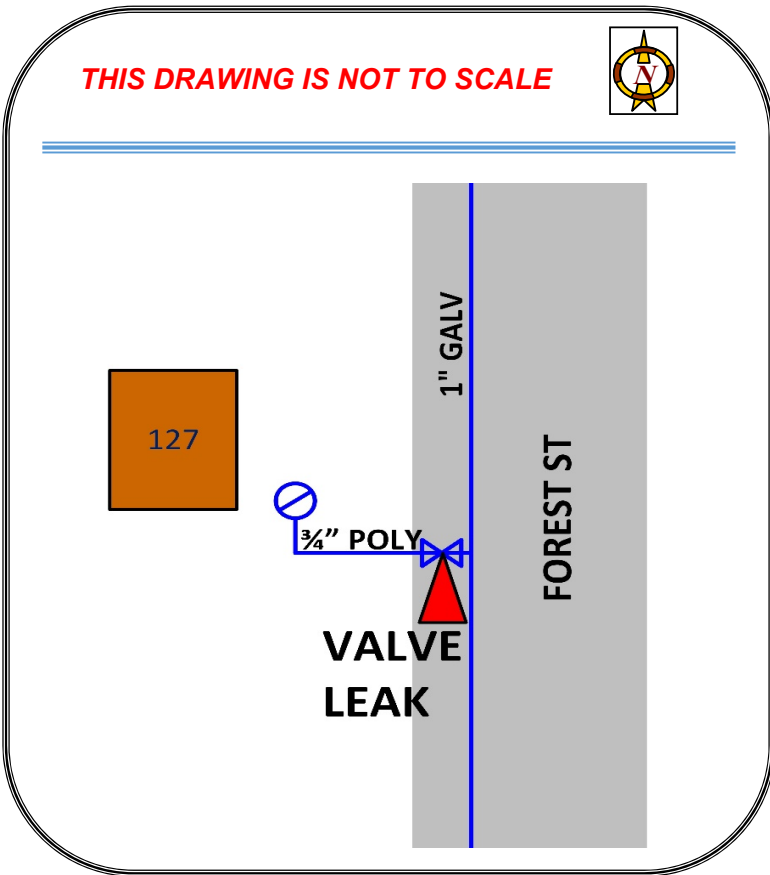
Leak Type
VALVE
Leak Address
127 FOREST ST

Client: San Lorenzo Valley Water District

Agreement: 23027

REMARKS
 VALVE LEAK. WATER INSIDE VALVE CAN. VERY HIGH FREQUENCY LEAK NOISE DETECTED. LEAK IS EITHER A FLANGE FITTING, NIPPLE, OR PACKING LEAK.

Action(s) Taken: _____
 Recommendation(s): REPAIR / REPLACE



EQUIPMENT USED	
S-30	
VISIBLE	

LEAK INFORMATION	
Leak Consultant:	EK
Leak Class:	II
Leak Rate (GPM):	3.00
Cover Type:	ASPHALT
Site Marked:	NO
Mins. Pinpointing:	30



Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"

Water Loss (gallons)	
Daily:	4,320
Weekly:	30,240
Monthly:	131,400
Annual:	1,576,800



LEAK REPORT

Leak #:	6
Date:	June 29, 2023
Map #:	
Coordinates	

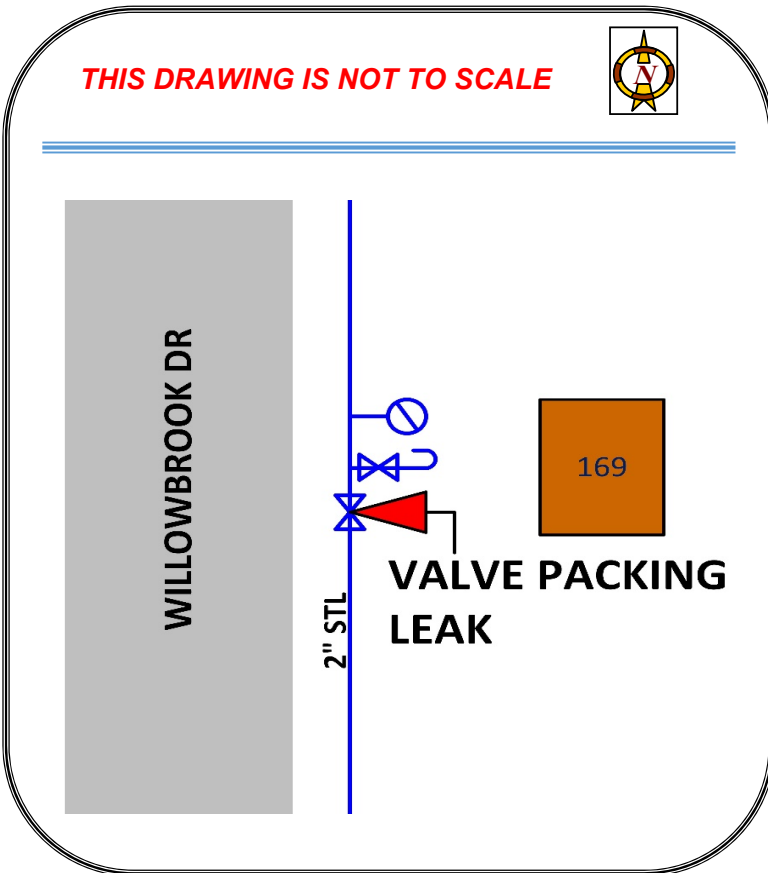
Leak Type	VALVE
Leak Address	168 WILLOWBROOK DR

Client: San Lorenzo Valley Water District

Agreement: 23027

REMARKS
 VALVE PACKING LEAK. WATER IN VALVE CAN.

Action(s) Taken: _____
 Recommendation(s): REPAIR / REPLACE



EQUIPMENT USED	
	S-30

LEAK INFORMATION	
Leak Consultant:	EK
Leak Class:	III
Leak Rate (GPM):	1.00
Cover Type:	ASPHALT
Site Marked:	NO
Mins. Pinpointing:	20



Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"

Water Loss (gallons)	
Daily:	1,440
Weekly:	10,080
Monthly:	43,800
Annual:	525,600



LEAK REPORT

Leak #:	7
Date:	June 29, 2023
Map #:	
Coordinates	

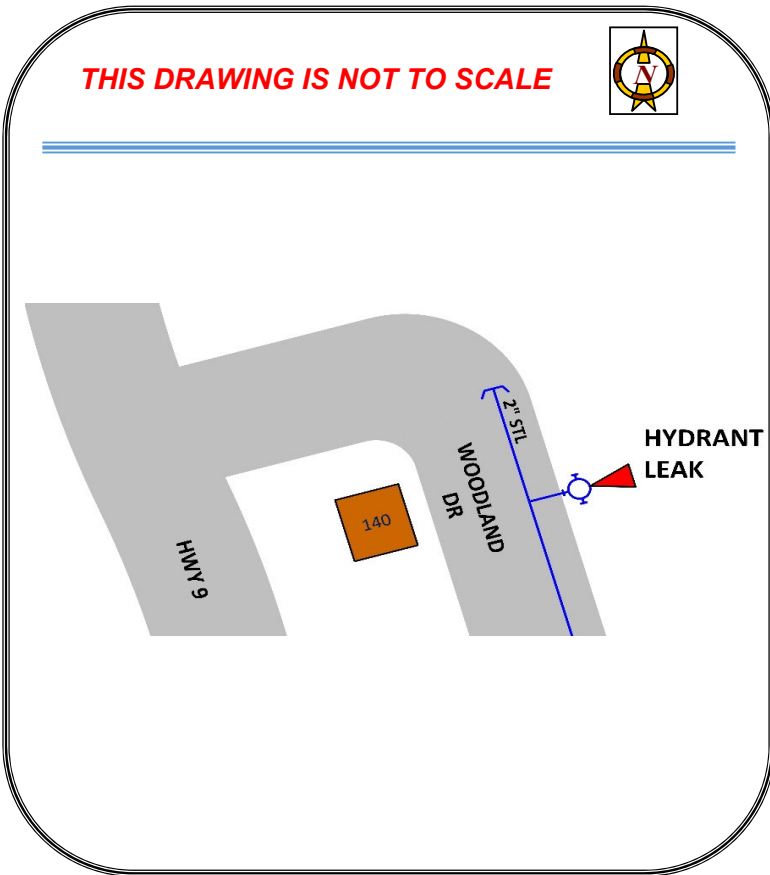
Leak Type
HYDRANT
Leak Address
140 WOODLAND DR

Client: San Lorenzo Valley Water District

Agreement: 23027

REMARKS
 SMALL LEAK ON DAMAGED WHARF HYDRANT. HYDRANT HAS BEEN HIT BY TREE DEBRIS AND ANGLED AT APPROXIMATELY 45 DEGREE ANGLE.

Action(s) Taken: _____
 Recommendation(s): REPAIR / REPLACE



EQUIPMENT USED	
	S-30
	VISIBLE

LEAK INFORMATION	
Leak Consultant:	EK
Leak Class:	III
Leak Rate (GPM):	0.50
Cover Type:	GRAVEL
Site Marked:	NO
Mins. Pinpointing:	20



Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"

Water Loss (gallons)	
Daily:	720
Weekly:	5,040
Monthly:	21,900
Annual:	262,800



LEAK REPORT

Leak #:	8
Date:	June 29, 2023
Map #:	
Coordinates	

Leak Type	MAIN
Leak Address	490 BALCH WAY

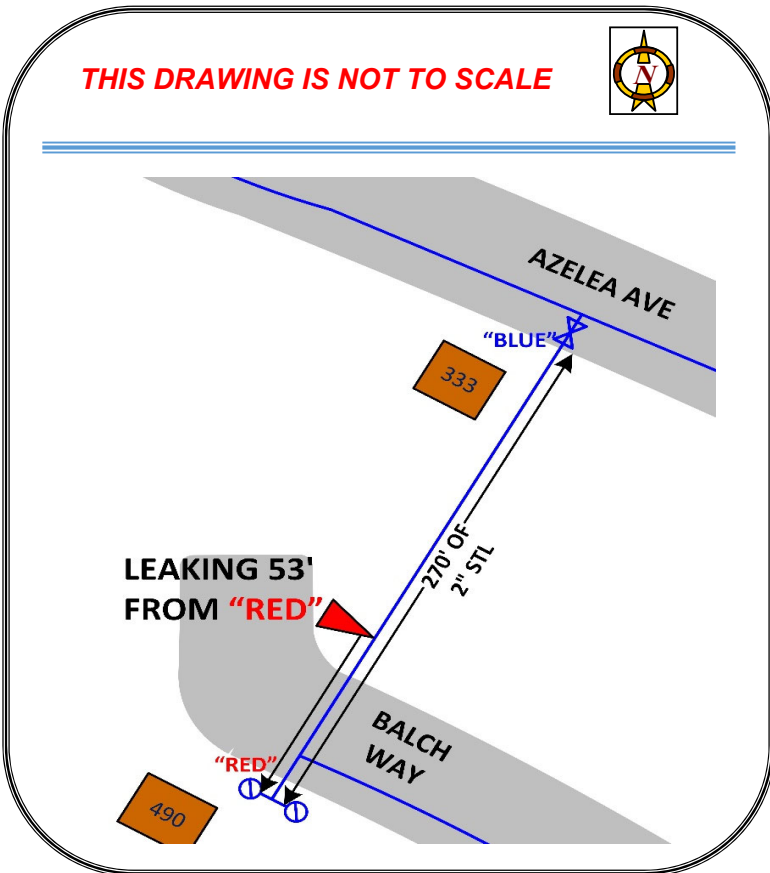
Client: **San Lorenzo Valley Water District**

Agreement: **23027**

REMARKS

VERY GOOD LEAK NOISE DETECTED AT "BLUE". GOOD CORRELATION WITH ESTIMATED DISTANCE (PIPE LENGTH). EXACT LOCATION OF MAIN LINE ALONG CROSS COUNTRY PATH IS UNKNOWN.

Action(s) Taken: _____
 Recommendation(s): **REPAIR / REPLACE**



EQUIPMENT USED	
	S-30

LEAK INFORMATION	
Leak Consultant:	EK
Leak Class:	II
Leak Rate (GPM):	5.00
Cover Type:	SOIL
Site Marked:	NO
Mins. Pinpointing:	60



Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"
38	A	53	227

Water Loss (gallons)	
Daily:	7,200
Weekly:	50,400
Monthly:	219,000
Annual:	2,628,000



LEAK REPORT

Leak #:	9
Date:	June 29, 2023
Map #:	
Coordinates	

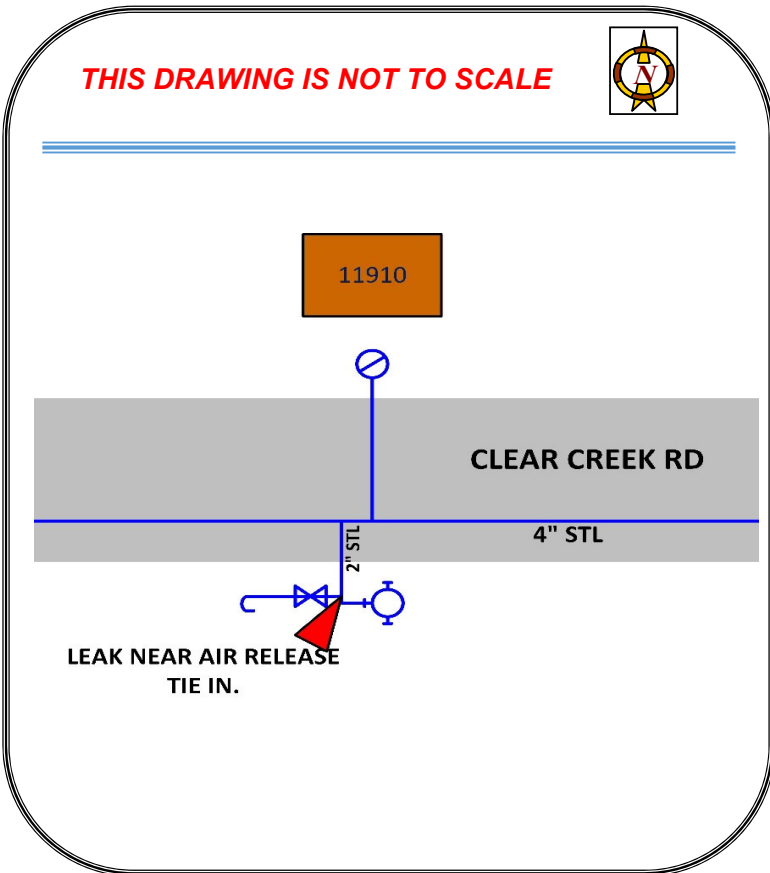
Leak Type	OTHER
Leak Address	11910 CLEAR CREEK RD

Client: San Lorenzo Valley Water District

Agreement: 23027

REMARKS
 LEAK NEAR AIR RELEASE TIE IN ON WHARF HYDRANT LEATERAL. VERY STRONG LEAK NOISE DETECTED AND WATER FLOWING FROM AFFECTED AREA.

Action(s) Taken: _____
 Recommendation(s): REPAIR / REPLACE



EQUIPMENT USED	

LEAK INFORMATION	
Leak Consultant:	EK
Leak Class:	II
Leak Rate (GPM):	5.00
Cover Type:	GRAVEL
Site Marked:	NO
Mins. Pinpointing:	30



Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"

Water Loss (gallons)	
Daily:	7,200
Weekly:	50,400
Monthly:	219,000
Annual:	2,628,000



LEAK REPORT

Leak #:	10
Date:	June 29, 2023
Map #:	
Coordinates	

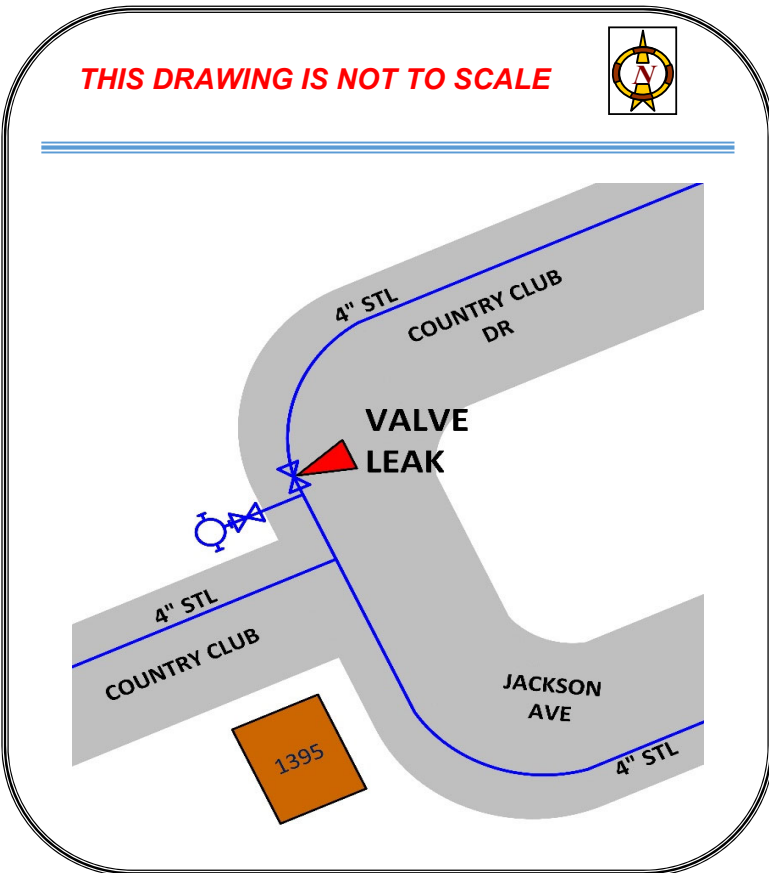
Leak Type
VALVE
Leak Address
1395 COUNTRY CLUB DR

Client: San Lorenzo Valley Water District

Agreement: 23027

REMARKS
 VALVE LEAK. VERY HIGH FREQUENCY LEAK NOISE DETECTED AT INLINE VALVE. BOTH VALVES HAVE LEAK NOISE WITH THE INLINE VALVE REGISTERING THE MOST LEAK NOISE. WATER VISIBLE IN BOTH VALVE CANS. POSSIBLE PACKING OR FLANGE LEAK.

Action(s) Taken: _____
 Recommendation(s): REPAIR / REPLACE



EQUIPMENT USED	
	S-30

LEAK INFORMATION	
Leak Consultant:	EK
Leak Class:	III
Leak Rate (GPM):	1.00
Cover Type:	ASPHALT
Site Marked:	NO
Mins. Pinpointing:	40



Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"

Water Loss (gallons)	
Daily:	1,440
Weekly:	10,080
Monthly:	43,800
Annual:	525,600



LEAK REPORT

Leak #:	11
Date:	June 29, 2023
Map #:	
Coordinates	

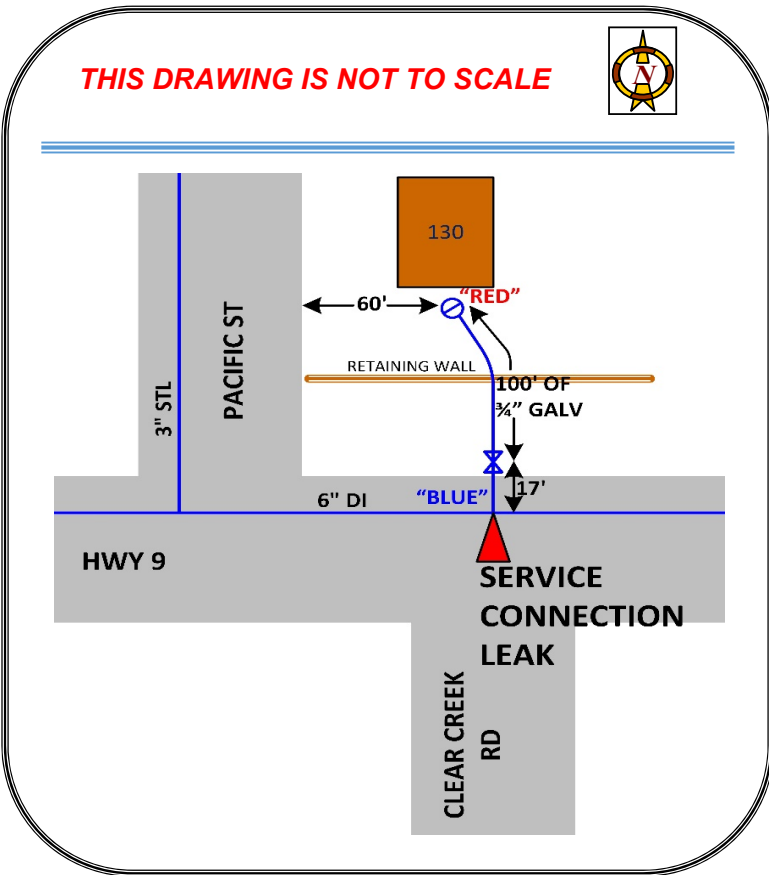
Leak Type
SERVICE CONNECTION
Leak Address
130 PACIFIC ST (ADDRESS ESTIMATED)

Client: San Lorenzo Valley Water District

Agreement: 23027

REMARKS
 CORRELATION FROM METER TO VALVE PINPOINTED LEAK AT VALVE "BLUE". GROUND MIC PINPOINTED THE LEAK AT SERVICE CONNECTION WHICH IS ON HWY 9 THROUGH A CORNER PROPERTY TO THE DUPLEX / HOUSE. NO WATER IN VALVE CAN "BLUE". DID NOT OPERATE THIS VALVE WHICH APPEARED TO BE A 3/4" GATE VALVE.

Action(s) Taken: _____
 Recommendation(s): REPAIR / REPLACE



EQUIPMENT USED	
	S-30
	LD-12
	LC-2500
LEAK INFORMATION	
Leak Consultant:	EK
Leak Class:	I
Leak Rate (GPM):	20.00
Cover Type:	ASPHALT
Site Marked:	YES
Mins. Pinpointing:	45



Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"
42	A	100'	0'

Water Loss (gallons)	
Daily:	28,800
Weekly:	201,600
Monthly:	876,000
Annual:	10,512,000



LEAK REPORT

Leak #:	U-1
Date:	<i>June 8, 2023</i>
Map #:	
Coordinates	

Leak Type
UNDEFINED
Leak Address
360 BLUE RIDGE DR

Client: San Lorenzo Valley Water District

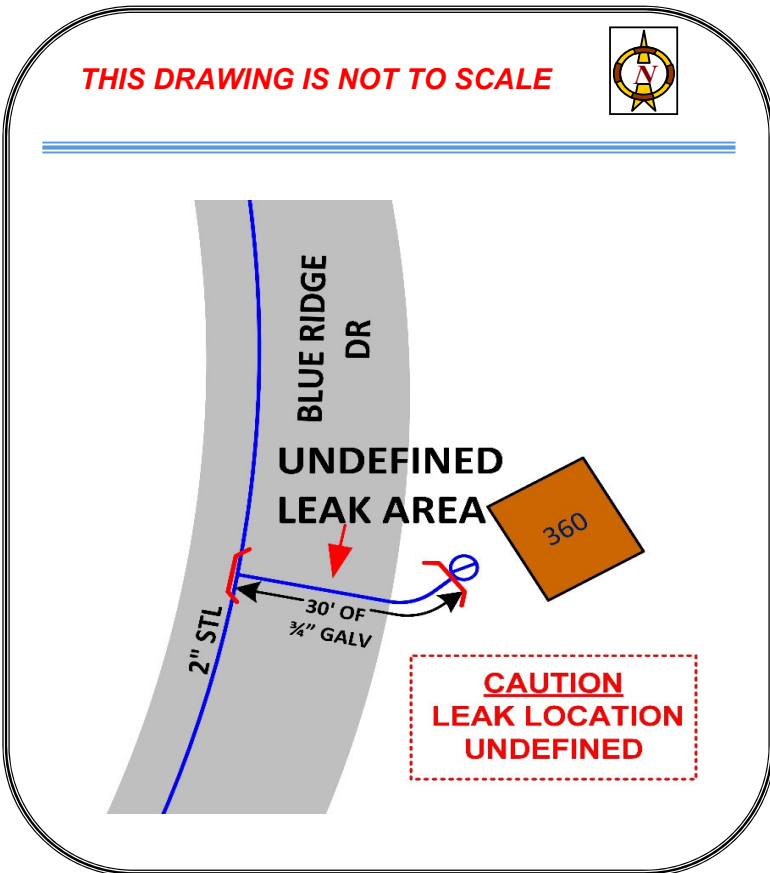
Agreement: 23027

REMARKS

GOOD LEAK NOISE DETECTED ON METER. AREA FULLY GROUND MIC'D WITH NO SOLID RESULTS. LEAK APPEARS TO BE SMALL AT THE PRESENT TIME. NO VISIBLE PROBLEMS THROUGHOUT AREA.

Action(s) Taken: _____

Recommendation(s): _____



EQUIPMENT USED	
	<i>S-30</i>
	<i>LD-12</i>

LEAK INFORMATION	
Leak Consultant:	<i>EK</i>
Leak Class:	<i>N/A</i>
Leak Rate (GPM):	<i>N/A</i>
Cover Type:	<i>N/A</i>
Site Marked:	<i>NO</i>
Mins. Pinpointing:	<i>45</i>

LEAK IMAGE NOT AVAILABLE

Computer Correlation Results			
Scan Time	Grade	Dist. "Red"	Dist. "Blue"

Water Loss (gallons)	
Daily:	
Weekly:	
Monthly:	
Annual:	

CONCLUSION

LEAK SURVEY CONCLUSION

Our thanks to James Furtado and all persons involved with this project for their assistance in gathering all the necessary paperwork and personnel to create, with USA, a mutually beneficial leak detection project.

With this survey, you have demonstrated concern for prudent water utilization and conservation.

Capitalizing on the most advanced leak detection technology available today, USA has successfully completed this Leak Detection Survey. The contents of this Final Report provide San Lorenzo Valley Water District with a permanent record of the activities performed to complete a Leak Survey along with the results achieved.

An important characteristic of this Leak Report is that the facts contained herein can be used in formulating a database for decision making regarding: the need for possible future meter programs, rehabilitation and pipeline replacement and/or the investigation of new water sources, etc. These types of decisions, regarding your utilization of water, now can be predicated more on facts rather than supposition or conjecture.

Prompt repair of any leaks reported provide an immediate benefit to San Lorenzo Valley Water District, which includes recovery of most water revenue and water conservation, etc.

Having achieved these results, we recommend that you continue to set up the infrastructure necessary to continue investigating leakage in the water distribution system. Implementation of any on-going leak survey program will ensure that leak losses are kept to a minimum, and the added enhancement of saving costs due to emergency call outs.

Utility Services Associates, LLC, is proud to have served San Lorenzo Valley Water District in this way and we wish to thank you for your substantial assistance and cooperation in this project.

If you or your staff has any questions regarding this Final Report, please feel free to call us at (877) 585-5325.

Best Regards,



Cory Simonson
President

