



**ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA
TRABUCO CANYON WATER DISTRICT
ADMINISTRATION FACILITY
32003 DOVE CANYON DRIVE, TRABUCO CANYON, CA
DECEMBER 6, 2023 AT 7:00 AM**

COMMITTEE MEMBERS

Michael Safranski, Committee Chair
Stephen Dopudja, Committee Member
Don Chadd, Committee Member Alternate

DISTRICT STAFF

Fernando Paludi, General Manager
Michael Perea, District Secretary
Lorrie Lausten, District Engineer
Gary Kessler, Water System Superintendent
Oscar Ulloa, Wastewater Superintendent
Jason Stroud, Maintenance Superintendent

AGENDA NOTE:

Trabuco Canyon Water District (District) will make this Engineering/Operational Committee Meeting available by telephone audio as follows:

Telephone Audio: 1 (669) 900-6833

Access Code: 973-7562-7682

Persons desiring to monitor the Committee meeting agenda items may download the agenda and documents on the internet at www.tcwd.ca.gov. You may submit public comments by email to the Committee at mperea@tcwd.ca.gov. In order to be part of the record, emailed comments on meeting agenda items must be received by the District at the referenced e-mail address not later than 7:00 a.m. (PDT) on the day of the meeting.

CALL MEETING TO ORDER

VISITOR PARTICIPATION

Members of the public wishing to address the Committee regarding a particular item on the agenda are requested to submit public comments by email to the Committee at mperea@tcwd.ca.gov. The Committee Chair will call on the visitor following the Committee's discussion about the matter. Committees do not constitute a quorum of the Board of Directors and Committee Members cannot make decisions on matters. The Committee makes recommendations only to the Board of Directors. Members of the public will be given the opportunity to speak to the Committee prior to making a recommendation on the matter. For persons desiring to make verbal comments and utilizing a translator to present their comments into English reasonable time accommodations, consistent with State law, shall be provided. Please limit comments to three minutes.

ORAL COMMUNICATION

Members of the public who wish to make comment on matters not appearing on the agenda are requested to submit oral communication by email to the Committee at mperea@tcwd.ca.gov. Under the requirements of State Law, Directors cannot take action on items not identified on the agenda and will not make decisions on such matters. The Board President may direct District Staff to follow up on issues as may be deemed appropriate. For persons desiring to make verbal comments and utilizing a translator to present their comments into English reasonable time accommodations, consistent with State law, shall be provided. Please limit comments to three minutes.

COMMITTEE MEMBER COMMENTS

REPORT FROM THE GENERAL MANAGER

ENGINEERING MATTERS

**PRESENTER(S): FERNANDO PALUDI, GENERAL MANAGER
MICHAEL PEREA, ASSISTANT GENERAL MANAGER
LORRIE LAUSTEN, DISTRICT ENGINEER**

ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

RECOMMENDED ACTION:

Approve the following Engineering/Operational Committee Meeting Recap(s) and recommend that the Board receive and file same (Consent Calendar).

1. November 1, 2023

ITEM 2: GOLF CLUB SEWER LIFT STATION IMPROVEMENTS

RECOMMENDED ACTION:

Recommend the Board of Directors authorize the General Manager to execute a contract for the Golf Club Sewer Lift Station Improvements to Pacific Hydrotech Corporation in the amount of \$1,889,300 plus a 5% contingency of \$94,465, for a total not-to exceed amount of \$1,983,765 (Action Calendar).

ITEM 3: INFRARED FIELD SURVEY OF TRABUCO CANYON WATER DISTRICT'S ELECTRICAL EQUIPMENT

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

ITEM 4: QUARTERLY CAPITAL IMPROVEMENT PROGRAM (CIP) UPDATE

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

ITEM 5: LEAD AND COPPER RULE REVISION-LCRR COMPLIANCE

RECOMMENDED ACTION:

Recommend the Board of Directors authorize the General Manager to execute a contract for the LCRR Service Line Inventory to MWDOC (Choice Program) in the not-to exceed amount of \$98,008 (Action Calendar).

ITEM 6: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES

1. Saddle Crest Development
2. Dove Slope Improvements
3. Other Projects

RECOMMENDED ACTION:

Committee to receive project status updates at the time of the Committee Meeting.



**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA | DECEMBER 6, 2023**

OPERATIONAL MATTERS

**PRESENTER(S): GARY KESSLER, WATER SYSTEM SUPERINTENDENT
OSCAR ULLOA, WASTEWATER OPERATIONS SUPERINTENDENT
JASON STROUD, MAINTENANCE DEPARTMENT SUPERINTENDENT**

ITEM 7: WATER SYSTEM UPDATES

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

ITEM 8: WASTEWATER SYSTEM UPDATES

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

ITEM 9: MAINTENANCE DEPARTMENT UPDATES

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

REGULATORY AND OTHER MATTERS

ITEM 10: OTHER MATTERS/REPORTS

RECOMMENDED ACTION:

Hear Other Matters/Reports that may have arisen after the posting of the agenda.

ADJOURNMENT

AVAILABILITY OF AGENDA MATERIALS

Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the Trabuco Canyon Water District Board of Directors in connection with a matter subject to discussion or consideration at an open meeting of the Board of Directors are available for public inspection at the Trabuco Canyon Water District Administrative Facility, 32003 Dove Canyon Drive, Trabuco Canyon, California (District Administrative Facility) or will be posted online on the District's website located at www.tcwd.ca.gov. If such writings are distributed to members of the Board less than 72 hours prior to the meeting, they will be available online at www.tcwd.ca.gov at the same time as they are distributed to the Board Members, except that, if such writings are distributed immediately prior to or during the meeting, they will be posted online on the District's website located at www.tcwd.ca.gov.

COMPLIANCE WITH THE REQUIREMENTS OF CALIFORNIA GOVERNMENT CODE SECTION 54954.2

In compliance with California law and the Americans with Disabilities Act, if you need special disability-related modifications or accommodations, including auxiliary aids or services in order to participate in the meeting, or if you need the agenda provided in an alternative format, please contact the District Secretary at (949) 858-0277, at least 48 hours in advance of the scheduled Board meeting. Notification at least 48 hours prior to the meeting will assist the District in making reasonable arrangements to accommodate your request. The Board Meeting Room is wheelchair accessible.



**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | DECEMBER 6, 2023**

ADMINISTRATIVE MATTERS

ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

RECOMMENDED ACTION:

Approve the following Engineering/Operational Committee Meeting Recap(s) and recommend that the Board receive and file same (Consent Calendar):

1. *November 1, 2023 Committee Meeting*

CONTACTS (staff responsible): PALUDI/PEREA



TRABUCO CANYON WATER DISTRICT ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | NOVEMBER 1, 2023

DIRECTORS PRESENT

Mike Safranski, Committee Chair
Stephen Dopudja, Committee Member

STAFF PRESENT

Fernando Paludi, General Manager
Michael Perea, Assistant General Manager
Lorrie Lausten, District Engineer
Gary Kessler, Water Superintendent
Jason Stroud, Maintenance Superintendent
Karen Warner, Principal Accountant
Phil Serpas, CMMS/SCADA Administrator
Roseann Lejsek, Administrative Assistant

PUBLIC PRESENT

None

CALL MEETING TO ORDER

Director Safranski called the November 1, 2023 Engineering/Operational Committee Meeting to order at 7:00 a.m.

VISITOR PARTICIPATION

No comments were received.

ORAL COMMUNICATION

No comments were received.

COMMITTEE MEMBER COMMENTS

No comments were received.

REPORT FROM THE GENERAL MANAGER

Mr. Paludi reported on the following matters:

- Southern California Water Coalition (SCWC) Annual Meeting is scheduled for Thursday, November 2nd and the District has received five complimentary tickets for the Board and staff.
- Mr. Paludi participated in a radio interview for KPPC 89.3 FM concerning the District's adopted rates and charges.

ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

Mr. Paludi presented the Engineering/Operational Committee Meeting Recap for Committee review in accordance with the agenda.

MOTION: Approve the Engineering/Operational Committee Meeting Recap and recommended that the Board receive and file the same (Consent Calendar) – Director Dopudja

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | NOVEMBER 1, 2023**

SECOND: Director Safranski
AYES: Directors Dopudja & Safranski
NOES: None
ABSTAIN: None
MOTION PASSED/FAILED: Passed 2 – 0

ITEM 2: ARC FLASH STUDY REQUEST FOR PROPOSAL (RFP)

Ms. Lausten presented this matter for Committee review and consideration, and she reported that District staff issued a request for proposals (RFP) to eight qualified firms to bring the District's facilities into regulatory compliance. Ms. Lausten reported that five firms responded to the RFP, and she presented a proposal evaluation for Committee review. Discussion occurred concerning the scope of work and the associated costs. Ms. Lausten recommended P2S, Inc. for the proposed work.

MOTION: Recommend the Board of Directors authorize the General Manager to execute a contract for the System Wide Arc Flash and Coordination Study to PS2, Inc. in the amount of \$136,800, plus a 10% contingency of \$13,680, for a total not-to-exceed amount of \$150,480 (Action Calendar) – Director Dopudja.

SECOND: Director Safranski
AYES: Directors Dopudja & Safranski
NOES: None
ABSTAIN: None
MOTION PASSED/FAILED: Passed 2 – 0

ITEM 3: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES

1. **Status of Improvements in Dove Plaza**
Mr. Paludi provided an update on this matter, and he reported that the fire service upgrades are ongoing including the replacement of service valves and backflow prevention devices.
2. **Lead & Copper Rules Revision Compliance**
Ms. Lausten reported that the Municipal Water District of Orange County (MWDOC) has offered contract services with Hazen to comply with this new regulation through its choice program for its member agencies, which includes TCWD, at a cost of \$150,000 per agency. Ms. Lausten reported that District staff has requested a separate proposal from Hazen to perform the same level of regulatory compliance at a lower cost. Ms. Lausten added that more information on this matter will be presented at a future meeting.
3. **Golf Club SLS Construction Bid Update**
Ms. Lausten reported that District staff has publicly bid this project to five qualified contractors and that bids are due in two weeks.
4. **Saddle Crest Development Update**
Mr. Paludi reported that District staff are meeting with Orange County Fire Authority (OCFA) staff to review the process for acceptance of the onsite pump station and reservoir. Discussion occurred concerning certain facility challenges.
5. **Other Projects**
None

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | NOVEMBER 1, 2023**

MOTION: None – Informational item only.

ITEM 4: WATER SYSTEM UPDATES

Mr. Kessler reviewed the projects and repairs for the prior month, and he reported that Water Operations staff has completed the following tasks:

1. Worked on start-up testing for the Saddle Crest development onsite reservoir and pump station.
2. Worked with Ferreira Construction on the Dove Canyon Plaza valve replacement project.
3. Prepared and completed the annual inspection by the Regional Water Board.
4. Restarted the Dimension Water Treatment Plant (DWTP).

Mr. Kessler presented the Water System Summary for Committee review, and he reported that the Dimension Water Treatment Plant (DWTP) will be offline the following week as Irvine Ranch Water District (IRWD) will introduce Irvine Lake water as a supply source at the Baker Water Treatment Plant. Discussion occurred concerning water quality control efforts.

MOTION: None – Informational item only.

ITEM 5: WASTEWATER SYSTEM UPDATES

Mr. Ulloa reviewed the projects and repairs for the prior month, and he reported that Wastewater Operations staff had completed the following tasks:

1. Worked with TESCO Controls on programming repairs of El Toro, Bell Canyon, and Barneburg Sewer Lift Stations.
2. Cleaned and prepped Robinson Ranch Wastewater Treatment Plant (WWTP) facility for the public tour.
3. Inspected manholes at Saddle Crest development and cleaned gravity lines.
4. Repaired a roller and performed the cleaning of the filter belt press at the WWTP.

Mr. Ulloa presented the Recycled Water System Summary for Committee review, and he reported that Operations has started pumping Dove Lake to supplement recycled water production to meet demand.

MOTION: None – Informational item only.

ITEM 6: MAINTENANCE DEPARTMENT UPDATES

Mr. Stroud reviewed the projects and repairs for the prior month, and he reported that Maintenance staff completed the following tasks:

Projects and Repairs

Maintenance staff performed and/or completed the following tasks and projects:

Water Operations

1. Worked with Operations to test the Saddle Crest development onsite reservoir and pump station.

Wastewater Operations

1. Worked with Operations and TESCO Controls at Bell Canyon Sewer Lift Station.

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | NOVEMBER 1, 2023**

District Fleet Upgrades & Other Projects

1. Annual SMOG on four District vehicles.
2. Repairs on Truck No. 3 to prepare for SMOG testing.
3. Completed emergency diesel repairs on the small backup power generator at administration facility.
4. Completed weed abatement on El Toro Road bike trail, WWTP, and access road/ridge between Brookseed Drive and Dove Reservoir.
5. Assisted with logistics on the District Facilities Tour.
6. Two staff members attended pump training at Evans Hydro site.
7. Met with Orange County Public Works (OCPW) staff on Trabuco Creek Road grading and road repairs.
8. OCFA Urban Search and Rescue (USR) Team performed trench setup and rescue training at Porter Ranch. This is an annual training event hosted by TCWD.

MOTION: None – Informational item only.

ITEM 7: OTHER MATTERS/REPORTS

There were no others matter reported.

MOTION: None

ADJOURNMENT

Director Safranski adjourned the November 1, 2023 Engineering/Operational Committee Meeting at 7:30 a.m.

DRAFT

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | DECEMBER 6, 2023**

ENGINEERING MATTERS

ITEM 2: GOLF CLUB SEWER LIFT STATION IMPROVEMENTS

Trabuco Canyon Water District (District) owns and operates the Golf Club Sewer Lift Station (SLS) in the Dove Canyon community adjacent to the golf club driving range. This station receives wastewater flows from majority of the community by way of Bell Canyon and Barneburg Sewer Lift Stations and gravity sewer flows, and then conveys the wastewater to the Robinson Ranch Wastewater Treatment Plant via a sewer force main on Hillrise. The station was constructed in the early 1990s and had undergone only minor improvements until Fiscal Year (FY) 2021-22, when a bypass was installed, along with a short section of the force main, the surge tank repaired, and the motor control center replaced. Staff identified a series of critical repairs and improvements for the station that have been budgeted for completion in the FY 2023-24 CIP.

Due to the long procurement time of equipment, Staff pre-purchased the three Cornell pumps (one spare), two guide rail systems/discharge elbows and the surge tank.

In November 2023, the District solicited bids from six (6) pre-qualified contractors, and received the following three (3) bids (Exhibit 1):

Golf Club SLS Bids	
Company	Bid Amount
Pacific Hydrotech	\$1,889,300
Ferreira Construction	\$2,470,000
Olsson Construction	\$2,791,000

Staff have reviewed the bids, checked the references and is recommending award to Pacific Hydrotech. In addition staff is currently soliciting proposals for Construction Management and Inspection Services which will be brought to the committee at the January 2024 meeting.

FUNDING SOURCE:

Capital Improvement Program

FISCAL IMPACT (PROJECT BUDGET)

YEAR	ORIGINAL	FINAL/ PROJECTED	STATUS
FY 21/22	\$420,000	\$579,291	MCC, By-Pass Tee, Emergency By-Pass
FY 22/23	\$870,000	\$330,000	Engineering/Pumps/Surge Tank/Survey
FY 23/24	\$1,800,000	\$2,300,000	Construction/Geotechnical/CSDC/CM/Easement
	\$3,090,000	\$3,209,291	TOTAL

ENVIRONMENTAL COMPLIANCE:

Notice of Exemption was filed with the County of Orange on November 1, 2021.

RECOMMENDED ACTION:

Recommend the Board of Directors authorize the General Manager to execute a contract for the Golf Club Sewer Lift Station Improvements to Pacific Hydrotech Corporation in the amount of \$1,889,300 plus a 5% contingency of \$94,465, for a total not-to exceed amount of \$1,983,765 (Action Calendar).

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | DECEMBER 6, 2023**

EXHIBIT(S):

1. Bid Comparison

CONTACTS (staff responsible): PALUDI/LAUSTEN

BID COMPARISON
GOLF CLUB SEWAGE LIFT STATOIN REHABILITATION PROJECT #2324-010
 Bid Opening Date: November 16, 2023 @ 2:00 p.m.

						#1		#2		#3	
						Pacific Hydrotech Corp. Jimmy Garibalo jgaribaldo@pachydro.com 314 E 3rd Street Perris, CA 92570 (951)-943-8803 License # 518335		Ferreira Construction Co. Bree Scott BScott@ferreiraconstruction.com 10370 Commerce Center Drive Suite B200 Rancho, Cucamonga CA 91730 (909)-606-5900 License # 985180		Olsson Construction, Inc. Kris Olsson kris@olssonconstruction.com 326 W. Katella Ave. 4J Orange, CA 92867 (714)-516-9496 License # 758748	
Item	Description	Quantity	Unit	Engineer's Unit Price	Engineer's Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost	Unit Cost	Total Cost
1	Mobilization / Demobilization	1	LS	\$155,810.00	\$155,810.00	\$80,000.00	\$80,000.00	\$130,000.00	\$130,000.00	\$10,000.00	\$10,000.00
2	Field Survey and Verification of Utility Locations, Field Dimensions, and Existing Electrical Work	1	LS	\$4,700.00	\$4,700.00	\$24,400.00	\$24,400.00	\$39,500.00	\$39,500.00	\$30,000.00	\$30,000.00
3	BMP Implementation and Erosion Control	1	LS	\$20,700.00	\$20,700.00	\$10,500.00	\$10,500.00	\$7,800.00	\$7,800.00	\$10,000.00	\$10,000.00
4	Excavation Safety Measures	1	LS	\$78,400.00	\$78,400.00	\$46,200.00	\$46,200.00	\$596,000.00	\$596,000.00	\$300,000.00	\$300,000.00
5	Clearing, Grubbing and Miscellaneous Site Demolition	1	LS	\$41,020.00	\$41,020.00	\$50,000.00	\$50,000.00	\$28,000.00	\$28,000.00	\$10,000.00	\$10,000.00
6	Demolition of Existing and Construction of Surge Tank Assembly and Accessories	1	LS	\$118,170.00	\$118,170.00	\$65,000.00	\$65,000.00	\$62,500.00	\$62,500.00	\$200,000.00	\$200,000.00
7	Construction of Diversion Manhole	1	LS	\$93,650.00	\$93,650.00	\$95,600.00	\$95,600.00	\$93,400.00	\$93,400.00	\$300,000.00	\$300,000.00
8	Construction of 12-inch PVC Gravity Sewer	1	LS	\$53,750.00	\$53,750.00	\$68,200.00	\$68,200.00	\$55,800.00	\$55,800.00	\$150,000.00	\$150,000.00
9	Construction of Bypass Wet Well	1	LS	\$278,000.00	\$278,000.00	\$249,900.00	\$249,900.00	\$268,000.00	\$268,000.00	\$350,000.00	\$350,000.00
10	Design, Construction and Monitoring of Temporary Sewer Bypass Facilities	1	LS	\$153,600.00	\$153,600.00	\$240,000.00	\$240,000.00	\$28,600.00	\$28,600.00	\$500,000.00	\$500,000.00
11	Miscellaneous Structural, Mechanical and Electrical Demolition	1	LS	\$31,800.00	\$31,800.00	\$61,000.00	\$61,000.00	\$103,000.00	\$103,000.00	\$100,000.00	\$100,000.00
12	Construction of Miscellaneous Structural Improvements	1	LS	\$165,900.00	\$165,900.00	\$51,400.00	\$51,400.00	\$58,000.00	\$58,000.00	\$50,000.00	\$50,000.00
13	Construction of Mechanical Improvements in Wet Well and Dry Pit	1	LS	\$181,100.00	\$181,100.00	\$295,000.00	\$295,000.00	\$250,500.00	\$250,500.00	\$125,000.00	\$125,000.00
14	Lining of Existing Wet Well, Diversion Manhole, and Bypass Wet Well	1	LS	\$143,400.00	\$143,400.00	\$146,100.00	\$146,100.00	\$111,400.00	\$111,400.00	\$125,000.00	\$125,000.00
15	Construction of Flow Meter with Precast Concrete Vault	1	LS	\$112,900.00	\$112,900.00	\$172,600.00	\$172,600.00	\$166,500.00	\$166,500.00	\$150,000.00	\$150,000.00
16	Construction of Miscellaneous Electrical Improvements	1	LS	\$100,000.00	\$100,000.00	\$37,400.00	\$37,400.00	\$185,000.00	\$185,000.00	\$75,000.00	\$75,000.00
17	Construction of Miscellaneous Site Improvements	1	LS	\$107,300.00	\$107,300.00	\$105,200.00	\$105,200.00	\$136,000.00	\$136,000.00	\$205,000.00	\$205,000.00
18	Startup and Testing, Record Documents, O&M Manuals and Warranties	1	LS	\$38,300.00	\$38,300.00	\$9,000.00	\$9,000.00	\$16,000.00	\$16,000.00	\$1,000.00	\$1,000.00
19	All Other Work	1	LS	\$37,570.00	\$37,570.00	\$6,800.00	\$6,800.00	\$59,000.00	\$59,000.00	\$25,000.00	\$25,000.00
20	Allowance for Field Orders	1		\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00
TOTAL (1 THROUGH 20) :					\$1,991,070.00		\$1,889,300.00		\$2,470,000.00		\$2,791,000.00

*Indicates an incorrect bid submittal

*\$2,784,600

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | DECEMBER 6, 2023**

ENGINEERING MATTERS

ITEM 3: INFRARED FIELD SURVEY OF THE DISTRICTS ELECTRICAL EQUIPMENT

The Trabuco Canyon Water District (TCWD) through its insurance carrier, Alliant Insurance Services, Inc. recommends conducting an infrared (IR) thermographic image of existing electrical equipment and components every three years. This IR survey should include pump stations, lift stations, reservoirs, and treatment plants.

IR thermographic images detect thermal energy or heat emitted from an object such as a poor electrical connection or a bad circuit breaker. IR thermographic imaging is a non-destructive test method that may be used to detect unbalanced loads, deteriorated insulation, or other potential problems in energized electrical equipment and components. With this information, the District can identify electrical equipment and components that are about to fail or require immediate maintenance or a potential onset of a fire.

On Tuesday, November 13, 2023, and Wednesday, November 14, 2023, National Infrared Company through Alliant Insurance Services, Inc. conducted an IR field surveys at 28-existing facilities on the following electrical equipment and components: VFDs, MMCs, control panels, ATs, PLCs, and lighting panels.

The severest issue that the IR thermography field survey discovered was loose/contaminated connections on a contact inside of the one control panel at the Robinson Ranch Pump Station and a fuse holder defect at the Plano Pump-Lift Station. These are some examples of what the technology of IR thermographic imaging can reveal in the prevention of major electrical equipment and components failures, thus ensuring critical facilities are always in service and their electrical equipment is safely operating.

The results of the IR field survey have been provided to operations staff to prioritize these repairs (Exhibit 1).

FUNDING SOURCE:

Not Applicable

FISCAL IMPACT (PROJECT BUDGET)

Not Applicable

ENVIRONMENTAL COMPLIANCE:

Not Applicable

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBIT(S):

1. IR Study Reports

CONTACTS (staff responsible): LAUSTEN



**2023 Infrared Risk Assessment Report For:
Alliant Risk Control Consulting**



**ACWA – JPIA
Trabuco Canyon Water District**

Lift Stations

**32003 Dove Canyon Drive
Trabuco Canyon, CA 92679**

November 13-14, 2023

**National Infrared LLC
30155 Dickens Dr
Menifee, CA 92584
951-349-8287
www.national-ir.com**

Executive Overview

- 1) National Infrared is strictly an inspection service and NOT a repair contractor. Results are not compromised by deriving benefits from our findings.
- 2) All problems are identified for what they are at the time of inspection. All problems are given a severity level based on load, temperature rise and other factors.
- 3) FLIR ThermoCam Infrared devices are used to conduct the Infrared Inspection. All data is analyzed in a PC based scientific infrared software to validate defects identified in the field and assign realistic priority levels.
- 4) This report does not purport to identify all possible electric defects and associated hazards. This service makes no claim either that there are no other hazards on the premises.
- 5) National Infrared assumes no responsibility for control, correction or continuation of conditions, actions, or practices existing at your facility, whether identified in this report or not. It is your responsibility to undertake appropriate measures to prevent accidents and comply with the law.
- 6) National Infrared cannot warrant that your repairs if made were in fact effective. All problems will remain as “open” until such time that an National Infrared Inspector has verified with an IR device the problem has been resolved.
- 7) The decision to repair should be based on your intimate knowledge and maintenance history of your facility.



National Infrared LLC
30155 Dickens Dr
Menifee, CA 92584
951-349-8287
www.national-ir.com

Description of Problem Severity Levels

1 – Critical – Highest priority level. Potential danger to life and limb exists, as well as eminent danger to equipment. Equipment is likely to deteriorate and will experience failure, causing this equipment and possibly down line equipment to malfunction and/or fail if not addressed immediately.

2 - Serious – Equipment failure is inevitable without immediate attention. Repair should be expedited ASAP. Maintenance of this equipment should be scheduled at the very next shut down, within 30 to 60 days. Close daily monitoring is also suggested if this equipment is not redundantly backed up.

3 – Important – If this is not redundant equipment, repair should be scheduled ASAP. A problem exists on this equipment and should be addressed during the next scheduled shut down. Weekly monitoring is also suggested to detect and evaluate deterioration.

4 - Minor -Problem is apparent and needs to be monitored on a regular basis. This is a low priority problem and down time should not occur, but monitoring is suggested.

5 -Normal – Equipment has no apparent problem at this time. However as loads change and duty cycles increase, this level may also increase. Some level of monitoring is still recommended.



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Prioritized List by Temperature Rise



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Prioritized List by Temperature Rise

AIS - ACWA JPIA - Trabuco Canyon WD
TCWD - Lift Stations

Operation Priority Key

CTO = Critical to operation
ETO = Essential to operation
NON = Non-essential to operation
UNC = Un-Classified

Report Date: 11/14/2023

Prior Inspection # :
Current Inspection # : 2254 November 13, 2023

Location \ Equipment => Problem Found	Asset ID	Operation Priority	Prior Insp#	Prior Prob #	Temp Rise	Current Prob #	Temp Rise	% Load	Repair Priority	Repair Status
O'Neil Lift Station \ Cabinet \ SP Disc => NEC Code Violation Excessive Dirt/Debris		CTO				V 1			3-Important	Open

Problem Documentation

IR Problems



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Visual	Page: 1
Report Date: 11/14/2023	
Severity: 3-Important	
Inspection # 2254	
IR Image: Flir1323.bmp	
Photo: DSCF0138.jpg	

Electrical Anomaly Report

Customer: AIS - ACWA JPIA - Trabuco Cyn WD **Site:** TCWD - Lift Stations

Asset ID:

Barcode:

Location: O'Neil Lift Station

Description: Cabinet
SP Disc



Hazard Type: Visual
Hazard Group: NEC Code Violation
Hazard Issue: Excessive Dirt/Debris

Hazard Classification: Visual

Observations: NEC Code Violation Excessive Dirt/Debris

Possible consequences:

What is the Cause:

Recommendations:

Problem Documentation

Visual Problems



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Executive Summary Visual

Overview: Trabuco Caño Water District - Lift Stations






The Infrared Electrical Inspection was performed by National Infrared, by a certified Infrared Thermographer. All of the items inspected are listed in this InspectTrend report. Any anomalies are listed in order of priority based on the component's temperature rise, as measured from a reference component of equal type and load at the time of the inspection. National Infrared assumes no liability directly or indirectly as a result of this inspection.

Current Inspection No: 2254 November 13, 2023

Prior Inspection No:

Priority	Temp Rise	Current Inspection	Prior Inspection	Percent of Change
1-Critical 		0 = 0%	NA	NA
2-Serious 		0 = 0%	NA	NA
3-Important 		1 = 100%	NA	NA
4-Minor 		0 = 0%	NA	NA
Total Tested Problems:		1	NA	NA
Number of New Documented Problems:		1 = 100%	NA	NA
Number of Tested recurring Problems:		0 = 0%	NA	NA
Number of prior problems which were Not Tested this inspection :			NA	
Number of Total Open Problems			1	
Number of prior problems which tested Normal this inspection :			NA	

Problem Severity Definitions:

-  Critical - Danger to life and limb, eminent danger to equipment
-  Serious - Equipment failure is inevitable without immediate attention. Repair should be expedited ASA
-  Important - If this is not redundant equipment, repair should be scheduled ASAP.
-  Minor - Problem is apparent and needs to be monitored on a regular basis.
-  Normal - Equipment has no apparent problem at this time.

* Summary of recurring problems on following page(s)

List of All Open Problems



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List of All Open Problems

Operation Priority Key

CTO = Critical to operation
ETO = Essential to operation
NON = Non-essential to operation
UNC = Un-Classified

AIS - ACWA JPIA - Trabuco Canyon WD
TCWD - Lift Stations

Prior Inspection No :
Current Inspection No : 2254 November 13, 2023

Report Date: 11/14/2023

Equipment and Problem Description	Asset ID	Operation Priority	Prob#	Insp#	Temp Rise	% Load	Severity	Status
O'Neil Lift Station \ Cabinet \ SP Disc Problem: NEC Code Violation Excessive Dirt/Debris		CTO	V1	2254			3-Important	TESTED

Work Orders IR & Visual



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Documentation/ Work Order Visual

AIS - ACWA JPIA - Trabuco Canyon WD
TCWD - Lift Stations

Work Order #:

Report Date: 11/14/2023

2254-1

Current Prob No: Visual/1

Location/Equipment Information	
Asset ID:	
Barcode:	
Location:	O'Neil Lift Station Cabinet SP Disc

Operation Priority:	Critical to operation
Repair Priority:	3-Important
Hazard Type:	Visual
Hazard Classification:	Visual
Hazard Group:	NEC Code Violation
Hazard Issue:	Excessive Dirt/Debris
Observations:	NEC Code Violation Excessive Dirt/Debris
What is the Cause:	

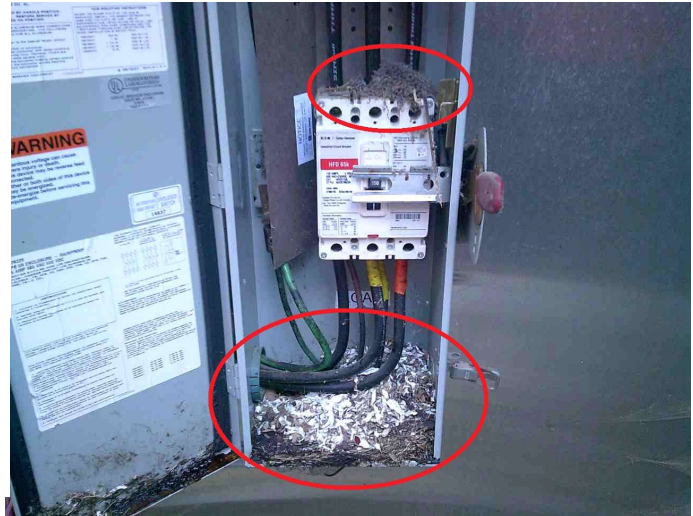
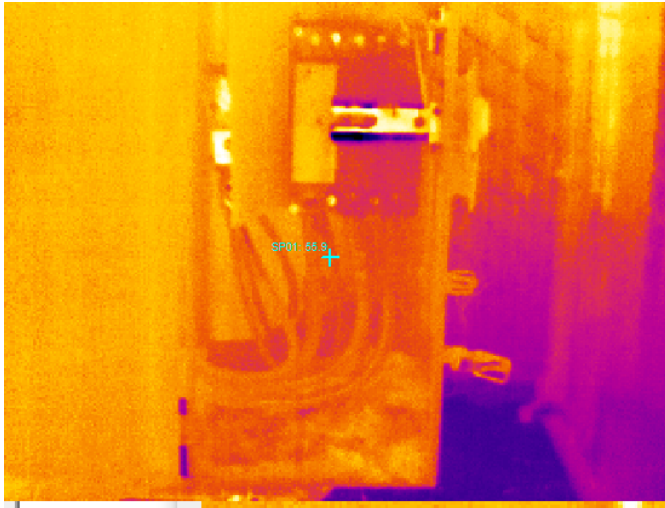


Photo File: Flir1323.bmp

Photo Date: 11/14/2023

Photo File: DSCF0138.jpg

Photo Date: 11/14/2023

PLEASE FAX BACK AFTER REPAIR

Repair Information

Loss to Production

Yes No Unknown

Consequences of Failure:

Repair Date:

Repaired By:

Parts Req. Before Failure:

Root Cause:

Parts Req. After Failure:

Repair Procedure:

Repair Recommendation:

Repair Notes:

Inspection Inventory by Inspection Order



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AIS - ACWA JPIA - Trabuco Canyon WD
TCWD - Lift Stations

Current Inspection Inventory Status by Inspection Order

Operation Priority Key

CTO = Critical to operation
 ETO = Essential to operation
 NON = Non-essential to operation
 UNC = Un-Classified

Equipment Test Status Key

TBT = To Be Tested
 NT/NL = Not Tested/No Load
 NT/TC = Not Tested/Time Constraint
 NT/UR = Not Tested/Under Repair
 NT/LO = Not Tested/Locked Out
 NT/NA = Not Tested/Not Available
 NT/TC = Not Tested/Time Constraint
 NT/NS = Not Tested/Not Specified
 NSF1 = Not Selected for this insp.

Prior Inspection No:

Current Inspection No: 2254

Total # of Equipment: 13

Equipment Tested this inspection: 13

Report Date: 11/14/2023
Inspected By : Smith, Sean

Tested	Equipment Name	Equipment Priority	Problem #	Barcode	Asset ID	Test Status Notes
TESTED	Heritage Lift Station	CTO				
TESTED	Control Panel	CTO				
TESTED	UM Panel	CTO				
TESTED	ATS	CTO				
TESTED	Via Allegre Lift Station	CTO				
TESTED	SWBD	CTO				
TESTED	Golf Club Lift Station	CTO				
TESTED	MCC	CTO				
TESTED	Barneburg Lift Station	CTO				
TESTED	SWBD	CTO				
TESTED	Bell Canyon Lift Station	CTO				
TESTED	MCC	CTO				
TESTED	O'Neil Lift Station	CTO				
TESTED	Cabinet	CTO				
TESTED	SP Disc	CTO	V1			
TESTED	Panel SP	CTO				
TESTED	Pump Control Panel	CTO				
TESTED	Santiago Lift Station	CTO				
TESTED	Cabinet	CTO				
TESTED	Disc	CTO				
TESTED	El Toro Lift Station	CTO				
TESTED	MCC	CTO				
TESTED	SWBD	CTO				



**2023 Infrared Risk Assessment Report For:
Alliant Risk Control Consulting**



**ACWA – JPIA
Trabuco Canyon Water District
TCWD Office & Treatment Plants**

**32003 Dove Canyon Drive
Trabuco Canyon, CA 92679**

November 13-14, 2023

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www.national-ir.com**

Executive Overview

- 1) National Infrared is strictly an inspection service and NOT a repair contractor. Results are not compromised by deriving benefits from our findings.
- 2) All problems are identified for what they are at the time of inspection. All problems are given a severity level based on load, temperature rise and other factors.
- 3) FLIR ThermaCam Infrared devices are used to conduct the Infrared Inspection. All data is analyzed in a PC based scientific infrared software to validate defects identified in the field and assign realistic priority levels.
- 4) This report does not purport to identify all possible electric defects and associated hazards. This service makes no claim either that there are no other hazards on the premises.
- 5) National Infrared assumes no responsibility for control, correction or continuation of conditions, actions, or practices existing at your facility, whether identified in this report or not. It is your responsibility to undertake appropriate measures to prevent accidents and comply with the law.
- 6) National Infrared cannot warrant that your repairs if made were in fact effective. All problems will remain as “open” until such time that an National Infrared Inspector has verified with an IR device the problem has been resolved.
- 7) The decision to repair should be based on your intimate knowledge and maintenance history of your facility.



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Description of Problem Severity Levels

1 – Critical – Highest priority level. Potential danger to life and limb exists, as well as eminent danger to equipment. Equipment is likely to deteriorate and will experience failure, causing this equipment and possibly down line equipment to malfunction and/or fail if not addressed immediately.

2 - Serious – Equipment failure is inevitable without immediate attention. Repair should be expedited ASAP. Maintenance of this equipment should be scheduled at the very next shut down, within 30 to 60 days. Close daily monitoring is also suggested if this equipment is not redundantly backed up.

3 – Important – If this is not redundant equipment, repair should be scheduled ASAP. A problem exists on this equipment and should be addressed during the next scheduled shut down. Weekly monitoring is also suggested to detect and evaluate deterioration.

4 - Minor -Problem is apparent and needs to be monitored on a regular basis. This is a low priority problem and down time should not occur, but monitoring is suggested.

5 -Normal – Equipment has no apparent problem at this time. However as loads change and duty cycles increase, this level may also increase. Some level of monitoring is still recommended.



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Prioritized List by Temperature Rise



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Prioritized List by Temperature Rise

AIS - ACWA JPIA - Trabuco Canyon WD
TCWD - Main Office-WWTP-Trabuco Creek GWTF

Operation Priority Key	
CTO	= Critical to operation
ETO	= Essential to operation
NON	= Non-essential to operation
UNC	= Un-Classified

Report Date: 11/14/2023 Prior Inspection # :
Current Inspection # : 2251 November 13, 2023

Location \ Equipment => Problem Found	Asset ID	Operation Priority	Prior Insp#	Prior Prob #	Temp Rise	Current Prob #	Temp Rise	% Load	Repair Priority	Repair Status
Robinson Ranch WWTP \ Blower Room \ East Hoffman Blower Disc => C Phase Switch Knife Defect on 110A Fuse		CTO				E 1	89 F	51%	2-Serious	Open

Problem Documentation IR Problems



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Executive Summary Electrical

Overview: TCWD - Main Office-WWTP-TC GWTF

The Infrared Electrical Inspection was performed by National Infrared, by a certified Infrared Thermographer. All of the items inspected are listed in this InspectTrend report. Any anomalies are listed in order of priority based on the component's temperature rise, as measured from a reference component of equal type and load at the time of the inspection. National Infrared assumes no liability directly or indirectly as a result of this inspection.

Current Inspection No: 2251 November 13, 2023

Prior Inspection No:

Priority	Temp Rise	Current Inspection	Prior Inspection	Percent of Change
1-Critical 	91 - Above	0 = 0%	NA	NA
2-Serious 	46 - 90	1 =100%	NA	NA
3-Important 	21 - 45	0 = 0%	NA	NA
4-Minor 	1 - 20	0 = 0%	NA	NA
5-Normal 	0	0 = 0%	NA	NA
Total Tested Problems:		1	NA	NA

Number of New Documented Problems:

1 =100%

NA

NA

Number of Tested recurring Problems:

0 = 0%

NA






NA

Number of prior problems which were Not Tested this inspection : NA

Number of Total Open Problems : 1

Number of prior problems which tested Normal this inspection : NA

Problem Severity Definitions:

-  Critical - Danger to life and limb, eminent danger to equipment
-  Serious - Equipment failure is inevitable without immediate attention. Repair should be expedited ASA
-  Important - If this is not redundant equipment, repair should be scheduled ASAP.
-  Minor - Problem is apparent and needs to be monitored on a regular basis.
-  Normal - Equipment has no apparent problem at this time.

* Summary of recurring problems on following page(s)

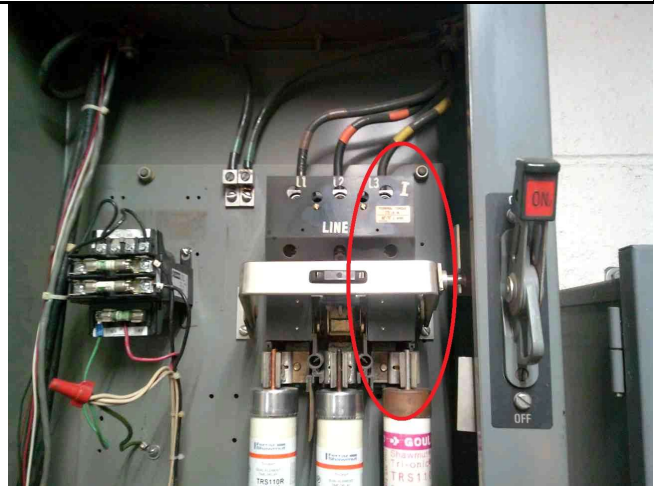
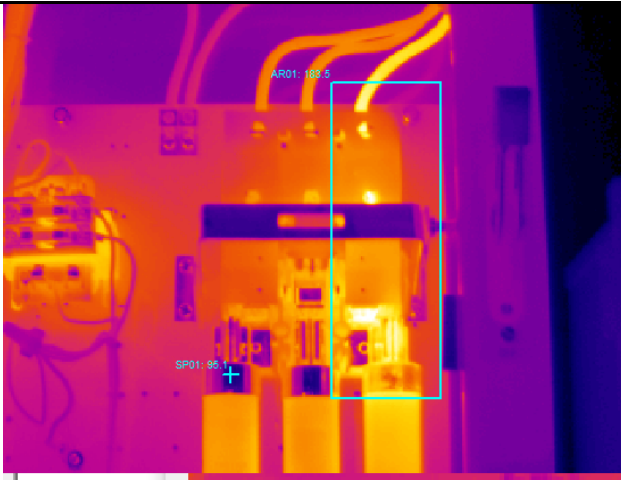


Page: 1
Report Date: 11/14/2023
Severity: 2-Serious
Inspection # 2251
IR Image: Flir1318.bmp
Photo: DSCF0127.jpg

Infrared Inspection Report

Customer: AIS - ACWA JPIA - Trabuco Canyon Site: TCWD - Main Office-WWTP-GWTF-WFP

Asset ID: Barcode:
 Location: Robinson Ranch WWTP
 Blower Room
 East Hoffman Blower Disc



Problem	Reference	Temperature Difference	Ambient Temperature
C Phase: 184 F	A Phase: 95 F	89 F	69
Load Test Results: C Phase: 56 Neutral: A Phase: 56 Rated Load: 110 B Phase: % Rated Load: 50.91			
Problem: C Phase Switch Knife Defect on 110A Fuse		History of Temp Rises and Loads Tested vs. Normalized Load to 50% Nov 13 2023 : 89F @51% vs 86F@50%	
Recommendation: Consult a "Qualified Person" to replace disconnect			

Problem Documentation

Visual Problems



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Executive Summary Visual

Overview: TCWD - Main Office and WWTP






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Current Inspection No: 2251 November 13, 2023

Prior Inspection No:

Priority	Temp Rise	Current Inspection	Prior Inspection	Percent of Change
1-Critical 		0 = 0%	NA	NA
2-Serious 		0 = 0%	NA	NA
3-Important 		0 = 0%	NA	NA
4-Minor 		0 = 0%	NA	NA
Total Tested Problems:		0	NA	NA
Number of New Documented Problems:		0	NA	NA
Number of Tested recurring Problems:		0	NA	NA
Number of prior problems which were Not Tested this inspection :			NA	
Number of Total Open Problems			NA	
Number of prior problems which tested Normal this inspection :			NA	

Problem Severity Definitions:

-  Critical - Danger to life and limb, eminent danger to equipment
-  Serious - Equipment failure is inevitable without immediate attention. Repair should be expedited ASA
-  Important - If this is not redundant equipment, repair should be scheduled ASAP.
-  Minor - Problem is apparent and needs to be monitored on a regular basis.
-  Normal - Equipment has no apparent problem at this time.

* Summary of recurring problems on following page(s)

List of All Open Problems



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List of All Open Problems

Operation Priority Key
 CTO = Critical to operation
 ETO = Essential to operation
 NON = Non-essential to operation
 UNC = Un-Classified

AIS - ACWA JPIA - Trabuco Canyon WD
 TCWD - Main Office-WWTP-Trabuco Creek GWTF

Prior Inspection No :
 Current Inspection No : 2251 November 13, 2023

Report Date: 11/14/2023

Equipment and Problem Description	Asset ID	Operation Priority	Prob#	Insp#	Temp Rise	% Load	Severity	Status
Robinson Ranch WWTP \ Blower Room \ East Hoffman Blower Disc Problem: C Phase Switch Knife Defect on 110A Fuse		CTO	E 1	2251	89F	51%	2-Serious	TESTED

Work Orders IR & Visual



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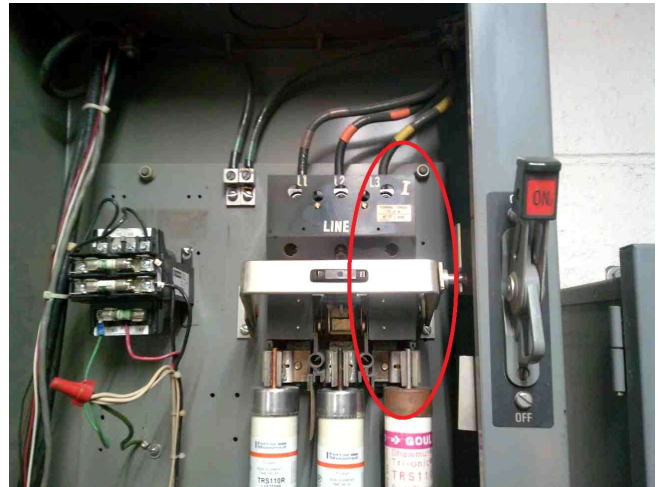
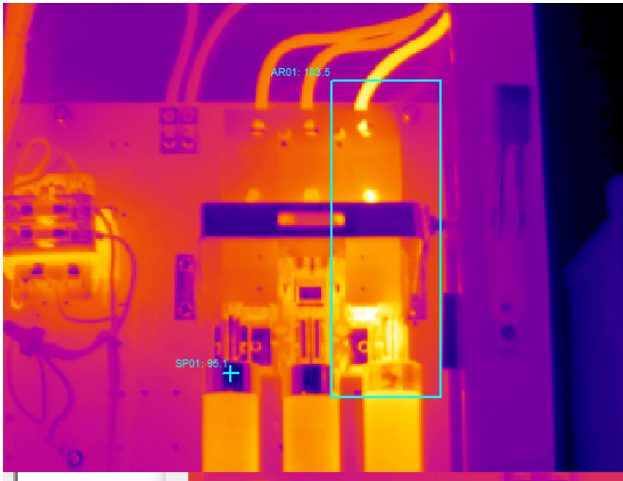
Page: 1
Report Date: 11/14/2023
Severity: 2-Serious

Infrared Work Order

Customer: AIS - ACWA JPIA - Trabuco Canyon **Site:** TCWD - Main Office-WWTP-TC GWTF

Asset ID:
Location: Robinson Ranch WWTP
 Blower Room
 East Hoffman Blower Disc

Barcode:



Infrared Filename	Infrared Date	Photo Filename	Photo Date
Flir1318.bmp	11/13/2023	DSCF0127.jpg	11/13/2023

Problem	Reference	Temperature Difference
C Phase: 184 F	A Phase: 95 F	89 F

Problem: C Phase Switch Knife Defect on 110A Fuse

Recommendation: Consult a "Qualified Person" to replace disconnect

Repaired By: _____ **Repair Date:** _____

Repair Notes:

Inspection Inventory by Inspection Order



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AIS - ACWA JPIA - Trabuco Canyon WD
TCWD - Main Office-WWTP-TC GWTF

Current Inspection Inventory Status by Inspection Order

Operation Priority Key

CTO = Critical to operation
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Equipment Test Status Key

TBT = To Be Tested
 NT/NL = Not Tested/No Load
 NT/TC = Not Tested/Time Constraint
 NT/UR = Not Tested/Under Repair
 NT/LO = Not Tested/Locked Out
 NT/NA = Not Tested/Not Available
 NT/TC = Not Tested/Time Constraint
 NT/NS = Not Tested/Not Specified
 NSF1 = Not Selected for this insp.

Report Date: 11/14/2023
Inspected By : Smith, Sean

Prior Inspection No:
 Current Inspection No: 2251
 Total # of Equipment: 27
 Equipment Tested this inspection: 27

Tested	Equipment Name	Equipment Priority	Problem #	Barcode	Asset ID	Test Status Notes
TESTED	Robinson Ranch WWTP	CTO				
TESTED	Maintenance Shop	CTO				
TESTED	MCC-B	CTO				
TESTED	Operations Building	CTO				
TESTED	SCADA Control	CTO				
TESTED	SWBD	CTO				
TESTED	Generator Room	CTO				
TESTED	Panel LPF Sub	CTO				
TESTED	XFMR Disc	CTO				
TESTED	45 KVA XFMR	CTO				
TESTED	Belt Press	CTO				
TESTED	MCC	CTO				
TESTED	Blower Room	CTO				
TESTED	Control Panel	CTO				
TESTED	MCC	CTO				
TESTED	East Hoffman Blower Disc	CTO	E1			
TESTED	West Hpoftmab Blower Disc	CTO				
TESTED	Admin Building	CTO				
TESTED	Outside	CTO				
TESTED	SWBD	CTO				
TESTED	Kitchen	CTO				
TESTED	Panel A	CTO				
TESTED	Panel B	CTO				
TESTED	File Room	CTO				
TESTED	Panel A-1	CTO				
TESTED	Panel A-2	CTO				
TESTED	Trabuco Creek GWTF	CTO				
TESTED	Control Room	CTO				
TESTED	Generator Termination Panel	CTO				
TESTED	SWBD	CTO				
TESTED	ATS	CTO				
TESTED	MCC	CTO				
TESTED	Rose Building	CTO				
TESTED	Pump Disc	CTO				
TESTED	Lighting Panel	CTO				
TESTED	UM Sub Panel	CTO				
TESTED	Diminsion DWTP	CTO				
TESTED	Elect Room	CTO				
TESTED	SWBD	CTO				
TESTED	Filter Building	CTO				
TESTED	MCC	CTO				
TESTED	30 KVA XFMR	CTO				
TESTED	Panel A	CTO				
TESTED	Storage Shed	CTO				
TESTED	MCC-B	CTO				



**2023 Infrared Risk Assessment Report For:
Alliant Risk Control Consulting**



**ACWA – JPIA
Trabuco Canyon Water District**

Pump Stations

**32003 Dove Canyon Drive
Trabuco Canyon, CA 92679**

November 13-14, 2023

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www.national-ir.com**

Executive Overview

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- 7) The decision to repair should be based on your intimate knowledge and maintenance history of your facility.



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Description of Problem Severity Levels

1 – Critical – Highest priority level. Potential danger to life and limb exists, as well as eminent danger to equipment. Equipment is likely to deteriorate and will experience failure, causing this equipment and possibly down line equipment to malfunction and/or fail if not addressed immediately.

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Prioritized List by Temperature Rise



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Prioritized List by Temperature Rise

AIS - ACWA JPIA - Trabuco Canyon WD
 TCWD - Pump Stations

Operation Priority Key
CTO = Critical to operation
ETO = Essential to operation
NON = Non-essential to operation
UNC = Un-Classified

Report Date: 11/14/2023 Prior Inspection # :
 Current Inspection # : 2252 November 13, 2023

Location \ Equipment => Problem Found	Asset ID	Operation Priority	Prior Insp#	Prior Prob #	Temp Rise	Current Prob #	Temp Rise	% Load	Repair Priority	Repair Status
Robinson Ranch Pump Station \ Control Panel => B Phase Loose/Contaminated Connection on 260A Contactor		CTO				E 1	36 F	50%	3-Important	Open
Plano Pump-Lift Station \ Lift Building \ XFMR Disc => A Phase Fuse Holder Defect on 20A Fuse		CTO				E 2	10 F	10%	4-Minor	Open

Problem Documentation IR Problems



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Executive Summary Electrical

Overview: TCWD - Pump Stations

The Infrared Electrical Inspection was performed by National Infrared, by a certified Infrared Thermographer. All of the items inspected are listed in this InspectTrend report. Any anomalies are listed in order of priority based on the component's temperature rise, as measured from a reference component of equal type and load at the time of the inspection. National Infrared assumes no liability directly or indirectly as a result of this inspection.

Current Inspection No: 2252 November 13, 2023

Prior Inspection No:

Priority	Temp Rise	Current Inspection	Prior Inspection	Percent of Change
1-Critical 	91 - Above	0 = 0%	NA	NA
2-Serious 	46 - 90	0 = 0%	NA	NA
3-Important 	21 - 45	1 = 50%	NA	NA
4-Minor 	1 - 20	1 = 50%	NA	NA
5-Normal 	0	0 = 0%	NA	NA
Total Tested Problems:		2	NA	NA

Number of New Documented Problems:

2 = 100%

NA

NA

Number of Tested recurring Problems:

0 = 0%

NA






NA

Number of prior problems which were Not Tested this inspection : NA

Number of Total Open Problems : **2**

Number of prior problems which tested Normal this inspection : NA

Problem Severity Definitions:

-  Critical - Danger to life and limb, eminent danger to equipment
-  Serious - Equipment failure is inevitable without immediate attention. Repair should be expedited ASA
-  Important - If this is not redundant equipment, repair should be scheduled ASAP.
-  Minor - Problem is apparent and needs to be monitored on a regular basis.
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* Summary of recurring problems on following page(s)

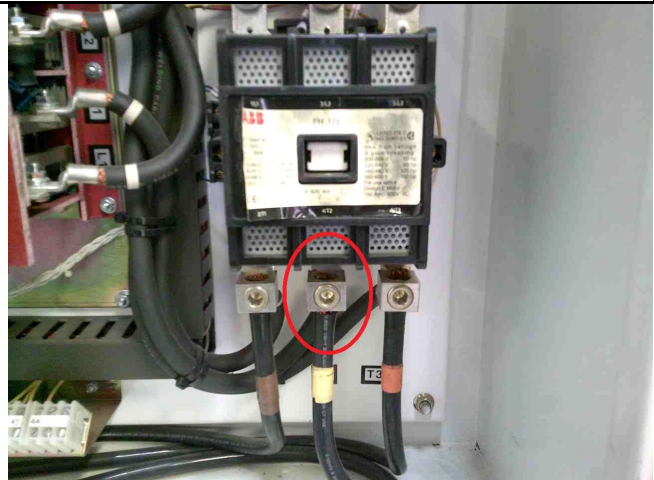
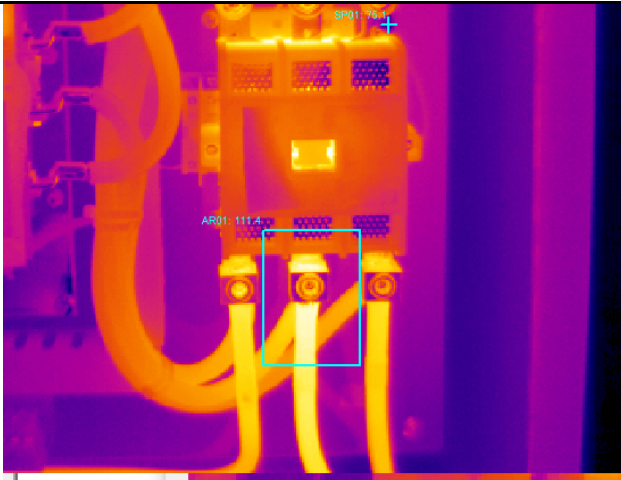


Page: 1
Report Date: 11/14/2023
Severity: 3-Important
Inspection # 2252
IR Image: Flir1320.bmp
Photo: DSCF0130.jpg

Infrared Inspection Report

Customer: AIS - ACWA JPIA - Trabuco Canyon Site: TCWD - Pump Stations

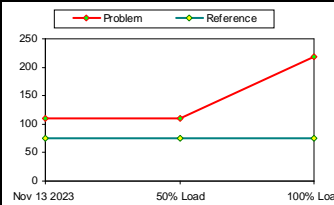
Asset ID: Barcode:
 Location: Robinson Ranch Pump Station
 Control Panel



Problem	Reference	Temperature Difference	Ambient Temperature
B Phase: 111 F	A Phase: 75 F	36 F	69

Load Test Results:

B Phase: 130 **Neutral:**
A Phase: 135 **Rated Load:** 260
C Phase: 130 **% Rated Load:** 50



Problem:

B Phase Loose/Contaminated Connection on 260A Contactor

Recommendation:

Consult a "Qualified Person" to determine cause of problem

History of Temp Rises and Loads Tested vs. Normalized Load to 50%

Nov 13 2023 : 36F @50% vs 36F@50%



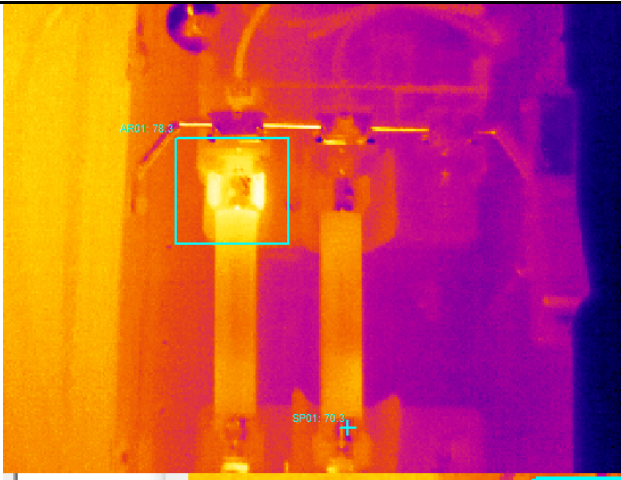
Page: 2
 Report Date: 11/14/2023
 Severity: 4-Minor
 Inspection # 2252
 IR Image: Flir1321.bmp
 Photo: DSCF0131.jpg

Infrared Inspection Report

Customer: AIS - ACWA JPIA - Trabuco Canyon Site: TCWD - Pump Stations

Asset ID:
Location: Plano Pump-Lift Station
 Lift Building
 XFMR Disc

Barcode:



Problem	Reference	Temperature Difference	Ambient Temperature
A Phase: 80 F	B Phase: 70 F	10 F	69
Load Test Results: A Phase: 2 Neutral: B Phase: 2 Rated Load: 20 % Rated Load: 10			
Problem: A Phase Fuse Holder Defect on 20A Fuse		History of Temp Rises and Loads Tested vs. Normalized Load to 50% Nov 13 2023 : 10F @ 10% vs 250F@50%	
Recommendation: Consult a "Qualified Person" to replace disconnect			

Problem Documentation

Visual Problems



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Executive Summary Visual

Overview: TCWD - Pump Stations






The Infrared Electrical Inspection was performed by National Infrared, by a certified Infrared Thermographer. All of the items inspected are listed in this InspeTrend report. Any anomalies are listed in order of priority based on the component's temperature rise, as measured from a reference component of equal type and load at the time of the inspection. National Infrared assumes no liability directly or indirectly as a result of this inspection.

Current Inspection No: 2252 November 13, 2023

Prior Inspection No:

Priority	Temp Rise	Current Inspection	Prior Inspection	Percent of Change
1-Critical 		0 = 0%	NA	NA
2-Serious 		0 = 0%	NA	NA
3-Important 		0 = 0%	NA	NA
4-Minor 		0 = 0%	NA	NA
Total Tested Problems:		0	NA	NA
Number of New Documented Problems:		0	NA	NA
Number of Tested recurring Problems:		0	NA	NA
Number of prior problems which were Not Tested this inspection :			NA	
Number of Total Open Problems			NA	
Number of prior problems which tested Normal this inspection :			NA	

Problem Severity Definitions:

-  Critical - Danger to life and limb, eminent danger to equipment
-  Serious - Equipment failure is inevitable without immediate attention. Repair should be expedited ASA
-  Important - If this is not redundant equipment, repair should be scheduled ASAP.
-  Minor - Problem is apparent and needs to be monitored on a regular basis.
-  Normal - Equipment has no apparent problem at this time.

* Summary of recurring problems on following page(s)

List of All Open Problems



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List of All Open Problems

Operation Priority Key

CTO = Critical to operation
 ETO = Essential to operation
 NON = Non-essential to operation
 UNC = Un-Classified

AIS - ACWA JPIA - Trabuco Canyon WD
 TCWD - Pump Stations

Prior Inspection No :
 Current Inspection No : 2252 November 13, 2023

Report Date: 11/14/2023

Equipment and Problem Description	Asset ID	Operation Priority	Prob#	Insp#	Temp Rise	% Load	Severity	Status
Plano Pump-Lift Station \ Lift Building \ XFMR Disc Problem: A Phase Fuse Holder Defect on 20A Fuse		CTO	E 2	2252	10F	10%	4-Minor	TESTED
Robinson Ranch Pump Station \ Control Panel Problem: B Phase Loose/Contaminated Connection on 260A Contactor		CTO	E 1	2252	36F	50%	3-Important	TESTED

Work Orders IR & Visual



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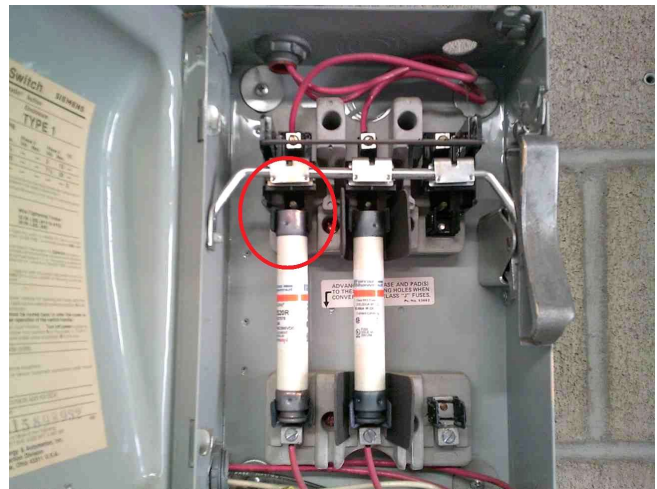
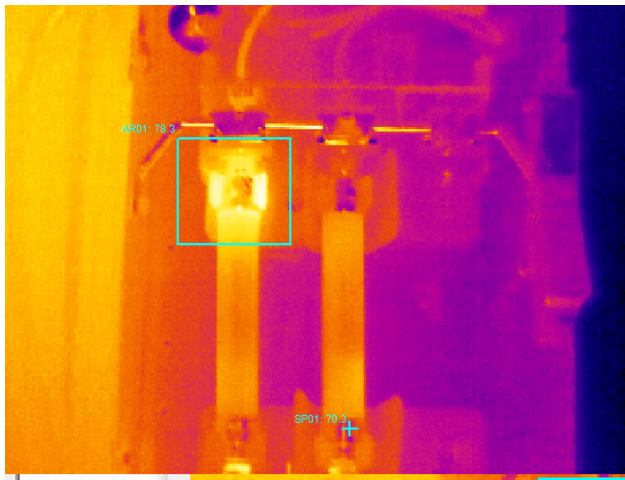


Page: 2
Report Date: 11/14/2023
Severity: 4-Minor

Infrared Work Order

Customer: AIS - ACWA JPIA - Trabuco Canyon WD **Site:** TCWD - Pump Stations

Asset ID: _____ **Barcode:** _____
Location: Plano Pump-Lift Station
 Lift Building
 XFMR Disc



Infrared Filename	Infrared Date	Photo Filename	Photo Date
Flir1321.bmp	11/13/2023	DSCF0131.jpg	11/13/2023

Problem	Reference	Temperature Difference
A Phase: 80 F	B Phase: 70 F	10 F

Problem: A Phase Fuse Holder Defect on 20A Fuse

Recommendation: Consult a "Qualified Person" to replace disconnect

Repaired By: _____ **Repair Date:** _____

Repair Notes:

Inspection Inventory by Inspection Order



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**AIS - ACWA JPIA - Trabuco Canyon WD
TCWD - Pump Stations**

Current Inspection Inventory Status by Inspection Order

Operation Priority Key

CTO = Critical to operation
ETO = Essential to operation
NON = Non-essential to operation
UNC = Un-Classified

Equipment Test Status Key

TBT = To Be Tested
NT/NL = Not Tested/No Load
NT/TC = Not Tested/Time Constraint
NT/UR = Not Tested/Under Repair
NT/LO = Not Tested/Locked Out
NT/NA = Not Tested/Not Available
NT/TC = Not Tested/Time Constraint
NT/NS = Not Tested/Not Specified
NSFI = Not Selected for this insp.

Report Date: 11/14/2023

Inspected By : Smith, Sean

Prior Inspection No:

Current Inspection No: 2252

Total # of Equipment: 33

Equipment Tested this inspection: 33

Tested	Equipment Name	Equipment Priority	Problem #	Barcode	Asset ID	Test Status Notes
TESTED	Dove Canyon Recycle	CTO				
TESTED	Cabinet A	CTO				
TESTED	Booster Pump Cabinet	CTO				
TESTED	PLC Cabinet	CTO				
TESTED	Robinson Ranch Pump Station	CTO				
TESTED	MCC	CTO				
TESTED	UM Sub Panel	CTO				
TESTED	SWBD	CTO				
TESTED	Control Panel	CTO	E1			
TESTED	Shadow Rock Urban Pump Station	CTO				
TESTED	Pump Control Panel	CTO				
TESTED	Plano Pump-Lift Station	CTO				
TESTED	Lift Building	CTO				
TESTED	SWBD	CTO				
TESTED	XFMR Disc	CTO	E2			
TESTED	UM Panel	CTO				
TESTED	Control Panel	CTO				
TESTED	Pump Building	CTO				
TESTED	Pump 1 Disc	CTO				
TESTED	Pump 2 Disc	CTO				
TESTED	Tick Creek Urban Pump Station	CTO				
TESTED	Pump Control Panel	CTO				
TESTED	Dove Creek Urban Pump Station	CTO				
TESTED	Pump Control Panel	CTO				
TESTED	Rose Canyon Pump Station	CTO				
TESTED	SWBD	CTO				
TESTED	Breaker Box	CTO				
TESTED	Canyon Creek Pump Station	CTO				
TESTED	ATS	CTO				
TESTED	SWBD	CTO				
TESTED	UM Panel	CTO				
TESTED	Topanga Pump Station	CTO				
TESTED	SWBD	CTO				
TESTED	Falcon Pump Station	CTO				
TESTED	SWBD	CTO				
TESTED	El Toro Pump Station	CTO				
TESTED	SWBD	CTO				
TESTED	XFMR	CTO				
TESTED	Ridgeline Pump Station	CTO				
TESTED	SWBD	CTO				
TESTED	VFD 104	CTO				
TESTED	VFD 103	CTO				
TESTED	VFD 102	CTO				
TESTED	VFD 101	CTO				
TESTED	Panel LP-1	CTO				



AIS - ACWA JPIA - Trabuco Canyon WD
 TCWD - Pump Stations

Current Inspection Inventory Status by Inspection Order

Operation Priority Key

CTO = Critical to operation
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 NON = Non-essential to operation
 UNC = Un-Classified

Equipment Test Status Key

TBT = To Be Tested
 NT/NL = Not Tested/No Load
 NT/TC = Not Tested/Time Constraint
 NT/UR = Not Tested/Under Repair
 NT/LO = Not Tested/Locked Out
 NT/NA = Not Tested/Not Available
 NT/TC = Not Tested/Time Constraint
 NT/NS = Not Tested/Not Specified
 NSFI = Not Selected for this insp.

Report Date: 11/14/2023
 Inspected By : Smith, Sean

Prior Inspection No:
 Current Inspection No: 2252
 Total # of Equipment: 33

Equipment Tested this inspection: 33

Tested	Equipment Name	Equipment Priority	Problem #	Barcode	Asset ID	Test Status Notes
TESTED	Utility Feed	CTO				
TESTED	ATS	CTO				



**2023 Infrared Risk Assessment Report For:
Alliant Risk Control Consulting**



**ACWA – JPIA
Trabuco Canyon Water District**

Reservoirs

**32003 Dove Canyon Drive
Trabuco Canyon, CA 92679**

November 13-14, 2023

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www.national-ir.com**

Executive Overview

- 1) National Infrared is strictly an inspection service and NOT a repair contractor. Results are not compromised by deriving benefits from our findings.
- 2) All problems are identified for what they are at the time of inspection. All problems are given a severity level based on load, temperature rise and other factors.
- 3) FLIR ThermoCam Infrared devices are used to conduct the Infrared Inspection. All data is analyzed in a PC based scientific infrared software to validate defects identified in the field and assign realistic priority levels.
- 4) This report does not purport to identify all possible electric defects and associated hazards. This service makes no claim either that there are no other hazards on the premises.
- 5) National Infrared assumes no responsibility for control, correction or continuation of conditions, actions, or practices existing at your facility, whether identified in this report or not. It is your responsibility to undertake appropriate measures to prevent accidents and comply with the law.
- 6) National Infrared cannot warrant that your repairs if made were in fact effective. All problems will remain as “open” until such time that an National Infrared Inspector has verified with an IR device the problem has been resolved.
- 7) The decision to repair should be based on your intimate knowledge and maintenance history of your facility.



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Description of Problem Severity Levels

1 – Critical – Highest priority level. Potential danger to life and limb exists, as well as eminent danger to equipment. Equipment is likely to deteriorate and will experience failure, causing this equipment and possibly down line equipment to malfunction and/or fail if not addressed immediately.

2 - Serious – Equipment failure is inevitable without immediate attention. Repair should be expedited ASAP. Maintenance of this equipment should be scheduled at the very next shut down, within 30 to 60 days. Close daily monitoring is also suggested if this equipment is not redundantly backed up.

3 – Important – If this is not redundant equipment, repair should be scheduled ASAP. A problem exists on this equipment and should be addressed during the next scheduled shut down. Weekly monitoring is also suggested to detect and evaluate deterioration.

4 - Minor -Problem is apparent and needs to be monitored on a regular basis. This is a low priority problem and down time should not occur, but monitoring is suggested.

5 -Normal – Equipment has no apparent problem at this time. However as loads change and duty cycles increase, this level may also increase. Some level of monitoring is still recommended.



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Problem Documentation

IR Problems



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Executive Summary Electrical

Overview: TCWD - Reservoirs

The Infrared Electrical Inspection was performed by National Infrared, by a certified Infrared Thermographer. All of the items inspected are listed in this InspectTrend report. Any anomalies are listed in order of priority based on the component's temperature rise, as measured from a reference component of equal type and load at the time of the inspection. National Infrared assumes no liability directly or indirectly as a result of this inspection.

Current Inspection No: 2253 November 13, 2023

Prior Inspection No:

Priority	Temp Rise	Current Inspection	Prior Inspection	Percent of Change
1-Critical 	91 - Above	0 = 0%	NA	NA
2-Serious 	46 - 90	0 = 0%	NA	NA
3-Important 	21 - 45	0 = 0%	NA	NA
4-Minor 	1 - 20	0 = 0%	NA	NA
5-Normal 	0	0 = 0%	NA	NA
Total Tested Problems:		0	NA	NA

Number of New Documented Problems: 0

0

NA

NA

Number of Tested recurring Problems: 0

0

NA






NA

Number of prior problems which were Not Tested this inspection : NA

Number of Total Open Problems : **NA**

Number of prior problems which tested Normal this inspection : NA

Problem Severity Definitions:

-  Critical - Danger to life and limb, eminent danger to equipment
-  Serious - Equipment failure is inevitable without immediate attention. Repair should be expedited ASA
-  Important - If this is not redundant equipment, repair should be scheduled ASAP.
-  Minor - Problem is apparent and needs to be monitored on a regular basis.
-  Normal - Equipment has no apparent problem at this time.

* Summary of recurring problems on following page(s)

Problem Documentation

Visual Problems



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Executive Summary Visual

Overview: TCWD - Reservoirs






The Infrared Electrical Inspection was performed by National Infrared, by a certified Infrared Thermographer. All of the items inspected are listed in this InspectTrend report. Any anomalies are listed in order of priority based on the component's temperature rise, as measured from a reference component of equal type and load at the time of the inspection. National Infrared assumes no liability directly or indirectly as a result of this inspection.

Current Inspection No: 2253 November 13, 2023

Prior Inspection No:

Priority	Temp Rise	Current Inspection	Prior Inspection	Percent of Change
1-Critical 		0 = 0%	NA	NA
2-Serious 		0 = 0%	NA	NA
3-Important 		0 = 0%	NA	NA
4-Minor 		0 = 0%	NA	NA
Total Tested Problems:		0	NA	NA
Number of New Documented Problems:		0	NA	NA
Number of Tested recurring Problems:		0	NA	NA
Number of prior problems which were Not Tested this inspection :			NA	
Number of Total Open Problems			NA	
Number of prior problems which tested Normal this inspection :			NA	

Problem Severity Definitions:

-  Critical - Danger to life and limb, eminent danger to equipment
-  Serious - Equipment failure is inevitable without immediate attention. Repair should be expedited ASA
-  Important - If this is not redundant equipment, repair should be scheduled ASAP.
-  Minor - Problem is apparent and needs to be monitored on a regular basis.
-  Normal - Equipment has no apparent problem at this time.

* Summary of recurring problems on following page(s)

Inspection Inventory by Inspection Order



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AIS - ACWA JPIA - Trabuco Canyon WD
 TCWD - Reservoirs

Current Inspection Inventory Status by Inspection Order

Operation Priority Key

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Equipment Test Status Key

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 NT/TC = Not Tested/Time Constraint
 NT/UR = Not Tested/Under Repair
 NT/LO = Not Tested/Locked Out
 NT/NA = Not Tested/Not Available
 NT/TC = Not Tested/Time Constraint
 NT/NS = Not Tested/Not Specified
 NSFI = Not Selected for this insp.

Prior Inspection No:

Current Inspection No: 2253

Total # of Equipment: 2

Equipment Tested this inspection: 2

Report Date: 11/14/2023

Inspected By : Smith, Sean

Tested	Equipment Name	Equipment Priority	Problem #	Barcode	Asset ID	Test Status Notes
TESTED	Dove Canyon Reservoir	CTO				
TESTED	Panel	CTO				
TESTED	Joplin Reservoir	CTO				
TESTED	Harris Grade Reservoir	CTO				
TESTED	Uub Panel	CTO				

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | DECEMBER 6, 2023**

ENGINEERING MATTERS

ITEM 4: QUARTERLY CAPITAL IMPROVEMENT PROGRAM (CIP) UPDATE

This report summarizes the status of Trabuco Canyon Water District’s (District’s) Capital Improvement Program (CIP) Update as summarized below and per the attached Exhibit 1.

Status of the CIP Projects	
No.	Status
1	Cancelled
1	Completed
2	Out to Bid
3	Design/Planning
8	Ongoing
6	In Construction

FUNDING SOURCE:

Capital Improvement Program

FISCAL IMPACT (PROJECT BUDGET):

\$4,512,000

ENVIRONMENTAL COMPLIANCE:

Not Applicable

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBIT(S):

1. CIP Budget Update

CONTACTS (staff responsible): PALUDI/LAUSTEN

**TRABUCO CANYON WATER DISTRICT
CAPITAL IMPROVEMENT PLAN BUDGET
FY 2023/2024**

Item	Name	Status	Project Basis	Amount
WATER PROJECTS				
1	DWTP Office Replacement	Cancelled	Safety/End of Service Life	\$350,000
2	10" Pipeline Replacement - Cooks to Harris Grade (Design)	Design/Planning	Reliability	\$250,000
3	PSPS Transfer Switch Upgrade-Water	In Construction	Reliability	\$60,000
4	DWTP Vault Improvements	In Construction	Safety	\$75,000
Sub-Total				\$735,000
SEWER PROJECTS				
5	Golf Club SLS Improvement	In Construction	End of Service Life	\$1,800,000
6	WWTP - Blower Replacements	Design/Planning	Reliability	\$400,000
7	Chiquita FY23/24	Ongoing	Contract Agreement	\$178,000
8	Heritage SLS Pump Replacement	In Construction	End of Service Life	\$100,000
9	PSPS Transfer Switch Upgrade-Sewer	In Construction	Reliability	\$60,000
10	WWTP SCADA/Fiber Optic Upgrade	Out to Bid	End of Service Life	\$130,000
11	El Toro Force Main Valve Replacements	Completed	Reliability/End of Service Life	\$79,000
Sub-Total				\$2,747,000
NON-DOMESTIC WATER PROJECTS				
12	Dove/Robinson Ranch Recycled BPS Improvements (Design)	Design/Planning	End of Service Life	\$100,000
13	Recycled PRV Improvements	Out to Bid	End of Service Life	\$200,000
Sub-Total				\$300,000
SHARED PROJECTS				
14	SCADA System Upgrades FY 23-24	In Construction	Reliability/End of Service Life	\$400,000
Sub-Total				\$400,000
EQUIPMENT				
15	Fleet	Ongoing	General Maintenance	\$130,000
16	Pump Replacements - Sewer	Ongoing	End of Service Life	\$50,000
17	Pump Replacements - Water	Ongoing	End of Service Life	\$50,000
Sub-Total				\$230,000
PROGRAM				
18	PRV - Water	Ongoing	General Maintenance	\$20,000
19	Valve Replacement - Water	Ongoing	General Maintenance	\$30,000
20	Wet Well Recoating	Ongoing	General Maintenance	\$30,000
21	Manhole Recoating	Ongoing	General Maintenance	\$20,000
Sub-Total				\$100,000
Total				\$4,512,000


**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | DECEMBER 6, 2023**

ENGINEERING MATTERS

ITEM 5: LEAD AND COPPER RULE REVISION-LCRR COMPLIANCE

The United States Environmental Protection Agency (USEPA) published the Lead and Copper Rule Revisions (LCRR) Final Rule on January 15, 2021, with an effective date of December 17, 2021. Included in the LCRR are requirements for all water systems to complete a Service Line Inventory (SLI) regardless ownership of the service line (i.e., including private property); and if service lines are found to contain or possibly contain lead, to also submit a Service Line Replacement Plan to the State (which has been delegated primary enforcement authority from the USEPA) by October 16, 2024. In March 2023, water industry guidance for completing the LCRR inventory was released. Service connections installed after January 1, 1986, are assumed not to contain lead; however, the rule requires agencies to complete a desktop inventory on each service.

MWDOC received proposals to conduct this work for its member agencies and the contract was awarded to Hazen. TCWD Staff met with MWDOC/Hazen and developed a hybrid approach to lower the unbudgeted fiscal impact to the District to \$98,008.

Project Name: Assistance with Completion and Submission of Lead and Copper Rule Revisions Service Line Inventories Client: Trabuco Canyon Date: 11/9/2023 	Original Approach			Hybrid Approach	
	Selection	Without savings	With savings		
RFP Task 1: Project Administration and Progress Reporting	Low Selection	\$ 26,830	\$ 16,098	No modifications	\$ 16,098
RFP Task 2: Assistance with Data Gathering, Records Review, and Historical Code Review	Low Selection	\$ 13,950	\$ 11,160	No modifications	\$ 11,160
RFP Task 3: Develop Lead Service Line Inventory Database and Initial Inventory	Low Selection	\$ 21,610	\$ 17,288	No modifications	\$ 17,288
RFP Task 4: Develop Approach for Alternative Material Verification Methods and Submit to DDW for Approval	Low Selection	\$ 16,640	\$ 12,480	No modifications	\$ 12,480
RFP Task 5: Apply Division of DDW Approved Alternative Verification Methods	Low Selection	\$ 5,800	\$ 5,800	No modifications	\$ 5,800
RFP Task 6: Assistance with Data Analysis	Low Selection	\$ 6,480	\$ 5,832	No modifications	\$ 5,832
RFP Task 7: Customer Communications					
RFP Task 8: Develop and Implement Private Property Owner Self-Verification					
RFP Task 9: Develop LSL Replacement Plan					
RFP Task 10: Manage (Field) Inspections/ Test Pitting/ Meter Inspections	Low Selection (10A)	\$ 51,050	\$ 51,050	Intern used for field verification (10B)	\$ 24,480
RFP Task 11: Provide Field Inspection Personnel to Assist with Physical Visual Verifications (Hourly Rate)					
RFP Task 12: Population of DDW Inventory Template and SLI Submission	Low Selection	\$ 4,870	\$ 4,870	No modifications	\$ 4,870
Total Fee	Phases 1 and 2	\$ 147,230	\$ 124,578		\$ 98,008
	Phase 1 (Tasks 1-6)	\$ 91,310	\$ 68,658		\$ 68,658
	Phase 2 (Tasks 10-12)	\$ 55,920	\$ 55,920		\$ 29,350

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | DECEMBER 6, 2023**

FUNDING SOURCE:

General Fund

FISCAL IMPACT (PROJECT BUDGET):

\$98,008

ENVIRONMENTAL COMPLIANCE:

Not Applicable

RECOMMENDED ACTION:

Recommend the Board of Directors authorize the General Manager to execute a contract for the LCRR Service Line Inventory to MWDOC (Choice Program) in the not-to exceed amount of \$98,008 (Action Calendar).

EXHIBIT(S):

None

CONTACTS (staff responsible): PALUDI/LAUSTEN

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | DECEMBER 6, 2023**

ENGINEERING MATTERS

ITEM 6: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES

1. Saddle Crest Development
2. Dove Slope Improvements
3. Other Projects

RECOMMENDED ACTION:

Committee to receive project status updates at the time of the Committee Meeting.

EXHIBIT(S):

None

CONTACTS (staff responsible): PALUDI/PEREA/LAUSTEN

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | DECEMBER 6, 2023**

OPERATIONAL MATTERS

ITEM 7: WATER SYSTEM UPDATES

The following is a brief report of the water system through **November 2023**.

Projects and Repairs

Water Operations staff performed and/or completed the following tasks and projects:

1. Assisted Ferreira Construction on Dove Canyon Plaza valve replacement project.
2. Performed preventative maintenance on pressure regulating valves (PRVs) in the Trabuco Oaks pressure zone.
3. Assisted L&S Construction to repair three potable water service leaks in the Saddle Cress community.
4. Replaced the Cla-Val to filter number three spray wands at the Dimension Water Treatment Plant (DWTP).
5. Attended panel factory witness testing at TESCO Controls in Temecula

Monthly Water System Operations Summary

The Monthly Water System Operations Summary is attached for the Committee's review. Any anomalies will be presented at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBITS

1. Monthly Water System Operations Summary

CONTACTS (staff responsible): PEREA/KESSLER

TRABUCO CANYON WATER DISTRICT
MONTHLY WATER SYSTEM OPERATIONS SUMMARY - 2023

SYSTEM PRODUCTION/SUPPLIES	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL
Number of Days	31	28	31	30	31	30	31	31	30	31	30	31	365
<i>Dimension WTP</i>	8%	17%	25%	33%	42%	50%	58%	67%	75%	83%	92%	100%	
SAC Pipeline Meter	91.2	109.2	15.0	25.3	41.2	2.5	0.0	93.3	71.4	85.0			534.1
Backwash, AF	2.7	3.5	0.8	1.1	1.9	0.6	0.0	3.5	1.5	2.7			18.2
Flushwater, AF	4.2	3.7	0.6	1.8	2.9	0.6	0.0	6.0	2.5	4.3			26.5
DWTP Effluent (1)	92.2	111.3	10.2	27.1	39.7	2.6	0.0	99.2	66.9	99.3			548.5
Groundwater, AF													
Trabuco Creek GWTF	0.0	0.0	17.9	103.1	100.2	105.7	112.3	91.9	0.0	0.0			531.1
U.S. Well AF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0
Total Groundwater (2)	0.0	0.0	17.9	103.1	100.2	105.7	112.3	91.9	0.0	0.0			531.1
Water Purchases, AF													
SMWD Treated Interconnection	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0
IRWD Treated Interconnections	0.0	0.0	58.0	0.0	9.3	41.2	106.2	0.0	127.9	80.7			423.3
IRWD Irvine Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0
Total Purchases (3)	0.0	0.0	58.0	0.0	9.3	41.2	106.2	0.0	127.9	80.7			423.3
Total Supply													
Total Supply AF (1,2,3)	92.2	111.3	86.1	130.2	149.2	149.5	218.5	191.1	194.8	180.0			1,502.9
% Year - Peak Prod. - 2,449 AF (2018)	4%	17%	12%	21%	23%	29%	38%	46%	54%	61%			38%
AF/Day	3.0	4.0	2.8	4.3	4.8	5.0	7.0	6.1	6.5	5.6			4.4
CFS/Day, Avg.	1.5	2.0	1.4	2.2	2.4	2.5	3.5	3.0	3.2	2.8			2.2
Reservoir Storage													
Monthly Average, MG	9.1	9.1	9.0	8.8	8.8	9.0	8.7	8.8	9.0	8.8			8.9
Monthly Average, AF	27.9	27.9	27.6	27.0	27.0	27.6	27.0	27.0	27.0	27.0			27.4
Days of Storage	4.0	4.0	4.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0			3.6
SYSTEM DEMANDS													
District Operations, AF (1)													
Dimension WTP	0.18	0.13	0.03	0.04	0.07	0.01	0.00	0.11	0.12	0.62			1.31
Robinson Ranch WWTP	0.001	0.001	0.007	0.004	0.004	0.005	0.004	0.001	0.003	0.004			0.03
Supplemental Domestic to RW Res.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.00
Subtotal	0.181	0.131	0.037	0.044	0.074	0.015	0.004	0.111	0.123	0.624			1.34
System Losses, AF (2)													
Flushing	0.98	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.0			4.64
Sewer Cleaning	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02			0.20
Line Breaks	0.46	0.00	0.15	0.00	0.05	0.00	0.01	0.30	2.00	0.3			3.27
Subtotal	1.46	0.68	0.17	0.02	0.07	0.02	0.03	0.32	2.02	3.32			8.11
Zone Demands, AF (3)													
Topanga Canyon	0.4	0.4	1.0	2.1	2.0	1.8	3.0	3.0	2.3	3.0			18.90
Falcon Estates	0.04	0.1	0.1	0.3	0.5	0.3	0.9	0.8	0.8	0.8			4.60
Rose PRV/The Oaks	0.6	1.7	1.9	1.9	1.5	1.8	2.2	2.0	2.3	2.3			18.17
Canyon Creek	0.1	0.2	0.1	0.3	0.3	0.4	0.4	0.3	0.1	0.3			2.64
Rose Pump Station	0.0	0.1	0.4	0.5	0.6	0.6	0.3	0.5	0.4	0.5			3.86
Robinson Ranch	19.6	26.1	18.1	35.3	36.8	35.6	63.2	59.4	56.3	44.6			395.02
Dove Canyon	38.8	43.9	39.2	54.8	63.5	65.6	80.5	73.4	65.8	20.6			546.05
Subtotal	59.5	72.2	60.8	95.1	105.2	106.1	150.5	139.4	128.1	122.0			1038.85
Total System Demand (1,2,3)	61.2	73.0	61.0	95.2	105.3	106.1	150.5	139.8	130.2	125.9			1048.30

TRABUCO CANYON WATER DISTRICT
MONTHLY WATER SYSTEM OPERATIONS SUMMARY - 2023

System Demands**													
AF/Day	3.0	4.0	2.8	4.3	4.4	5.0	7.0	6.1	6.5	5.6			4.3
Daily Average, CFS	1.5	2.0	1.4	2.2	2.2	2.5	3.4	3.0	3.2	2.8			2.2
Other Water Deliveries/Purchases													
Ridgeline (DWTP Delivery)	85.2	103.0	8.9	24.9	35.5	2.0	0.0	90.4	61.8	85.6			259.5
El Toro (Interconnection Purchase)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0
Baker WTP (CSC Delivery)	115.0	108.0	55.2	55.2	81.7	72.2	79.8	103.8	103.8	83.1			567.1
Portola Hills (Wholesale Purchase)	8.0	8.4	6.9	7.7	9.0	11.0	12.3	14.3	14.0	10.2			63.3
Skyridge (Wholesale Purchase)	1.5	1.5	1.6	1.9	1.7	2.0	2.2	2.5	2.5	2.0			12.5
* Usage estimated	** Excludes Operational use, losses, and supplement to Recycled Water Reservoir (RW)												

**TRABUCO CANYON WATER DISTRICT
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OPERATIONAL MATTERS

ITEM 8: WASTEWATER SYSTEM UPDATES

The following is a brief report of the wastewater system through **November 2023**.

Projects and Repairs

Wastewater Operations staff performed and/or completed the following tasks and projects:

1. Worked with TESCO Controls on programming repairs of Dove (NDW) Pump Station VFD's
2. Removed soil from slope failure on v-ditch above the Robinson Ranch Wastewater Treatment Plant (WWTP) reclaimed water reservoir.
3. Worked with Tesco on final sites for SCADA upgrade programming.
4. Replaced 25' of influent line, 12" in diameter that feeds the WWTP West SBR tank
5. Removed a tree at the WWTP reclaimed reservoir that was lifting a v-ditch section

Sewer System Management Plan (SSMP) Report

The purpose of the program is to communicate on a regular basis with the public on the development, implementation, and performance of TCWD's SSMP. Status updates on the work and type of work performed on the sewer system will be provided, including sewer line and manhole cleaning, system repairs, lift station cleaning, and updates from satellite facilities:

Sewer System Management Plan (SSMP) Monthly Update	
Total Sewer Line, Feet*	212,045
Total Sewer Line Cleaned (Ft) – Month	5,270
Total Sewer Line Cleaned (Ft) – Cleaning Cycle	171,710
Cleaning Cycle Period (Mos.) [Start date: 9/1/22]	15
Total Sewer Line Cleaned, %	80%
The Oaks at Trabuco – Pumping Frequency for the Month	13
O'Neill Park Sewer System Status	Ok
O'Neill Park Sewer System Repairs	None
SSMP Quarterly Report – <i>Next Quarterly Report</i>	4Q 2023
SSMP Program Audit – <i>Next Audit Report**</i>	February 2024

**This amount includes the OC Parks-owned O'Neill Park sewer system the District is contracted to clean.*

***Periodic internal audits shall be conducted, at a minimum every two years, with reports kept on file. The audit shall focus on evaluating the effectiveness of the SSMP and TCWD's compliance with the mandatory elements of TCWD's SSMP:*

Monthly Recycled Water System Operations Summary

The Monthly Recycled Water System Operations Summary is attached for the Committee's review. Any anomalies will be presented at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBITS

1. Monthly Recycled Water System Operations Summary

CONTACTS (staff responsible): PEREA/ULLOA

TRABUCO CANYON WATER DISTRICT | NON-DOMESTIC WATER SYSTEM SUMMARY - 2023

RECYCLED WATER SUPPLY															
	MAX	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	FIVE YEAR AVG
WWTP Reclaimed Water Production, AF	78.3	58.6	37.8	34.6	29.2	38.2	27.1	40.9	43.2	38.2	40.3			388.0	529.1
Reclaimed Reservoir Level, FT	1274.5	1,273.0	1,274.0	1,272.5	1,272.2	1,272.0	1,270.0	1,259.0	1,262.2	1,258.5	1,252.2			-	-
Reclaimed Reservoir Free Board, FT	25.5	1.5	0.5	2.0	2.3	2.5	4.5	15.5	12.3	16.0	22.3			-	-
Reclaimed Reservoir Storage, AF	145.5	135.7	139.3	132.1	130.0	128.6	118.8	67.0	78.6	64.3	41.6			-	-
Supplemental Domestic Water Added, AF	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	35.5

RECYCLED WATER SYSTEM DEMAND															
NON DOMESTIC WATER USER	ALLOC. AF	8% JAN	17% FEB	25% MAR	33% APR	42% MAY	50% JUN	58% JUL	67% AUG	75% SEP	83% OCT	92% NOV	100% DEC	TOTAL	ALLOC. %
Dahlia Court	8.2	0.07	0.1	0.0	0.3	0.2	0.2	0.2	0.3	0.3	0.4			2.03	24.7%
Dove Canyon Golf Course	106.7	0.29	5.9	0.2	17.4	15.0	26.4	51.2	41.2	23.6	24.8			206.05	193.2%
Dove Canyon Master Association	279.3	0.28	1.1	0.1	7.6	16.6	13.1	26.3	21.1	18.3	14.7			119.18	42.7%
Robinson Ranch	80.2	0.25	1.4	0.3	0.8	1.4	2.9	4.0	3.3	3.4	4.1			21.79	27.2%
Trabuco Highlands	159.7	2.25	5.9	0.1	6.5	8.5	5.3	11.4	6.2	5.8	5.0			56.86	35.6%
City of RSM	0.1	0.00	0.03	0.00	0.04	0.05	0.05	0.03	0.01	0.00	0.01			0.21	164.6%
Construction Water	N/A	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.00	N/A
Sakaida Nursery	1.1	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.00	0.0%
SMWD	N/A	41.74	40.6	7.7	0.0	2.3	4.1	5.3	6.2	45.5	17.9			171.47	N/A
TY Nursery	17.9	0.00	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.3			13.30	74.3%
TOTAL, AF	653.2	44.9	55.1	8.4	32.7	44.1	52.0	98.5	78.2	96.9	80.1			590.89	90.5%
PERCENTAGE OF NDW ALLOCATION/YEAR		6.9%	15.3%	16.6%	21.6%	28.3%	36.3%	51.4%	63.4%	78.2%	90.5%				
TOTAL ANNUAL AVG. NDW AVAILABLE**	774.36														

URBAN RUNOFF CAPTURE AND REUSE															
DISTRICT FACILITY		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	FIVE YEAR AVG
Shadow Rock Detention Basin Production		0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.01	0.01			0.23	14.2
Dove Tick Creek Production*	<i>Dry Season</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	8.8	5.5			22.0	58.8
	TCWD Portion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	4.4	2.7			11.0	-
	SMWD Portion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	4.4	2.7			11.0	-
Dove Lake Water Pumped		0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.7	18.2	9.4			75.3	185.8
Dove Lake Free Board, Ft		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5			-	-
Dove Lake Storage, AF		331.0	331.0	331.0	331.0	331.0	331.0	331.0	331.0	328.3	328.3			-	-
Total Rainfall, In.		8.1	2.1	10.3	0.0	1.1	0.0	0.0	3.0	0.3	0.1			24.8	14.7

* SMWD share of Dove/Tick Pump Station Dry Season Water is 50% of production.

** Based on 5-Year Average Reclaimed Water Reservoir Base Supply & Recycled Water Production

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OPERATIONAL MATTERS

ITEM 9: MAINTENANCE DEPARTMENT UPDATES

The following is a brief report of work completed by Maintenance staff through **November 2023**

Projects and Repairs

Maintenance staff performed and/or completed the following tasks and projects:

Water Operations

1. Assisted with Saddle Crest development site inspections.
2. Attended panel factory witness testing at TESCO Controls in Temecula.

Wastewater Operations

1. Assisted the replacement of a section of the raw influent header pipeline at the WWTP.
2. Swapped out damaged Sutorbilt blower at WWTP.
3. Assisted with the removal of sand and sediment from the WWTP Reclaimed Water reservoir with rental equipment.

District Fleet Upgrades & Other Projects

1. Repaired the leaking/damaged ram on the skip loader front bucket.
2. Oil change on Veh. #1
3. Backhoe repairs on clam-shell/loader bucket rams.
4. Slide Rail Truck out for repairs on winch cable with Fleet Services Anaheim

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBITS

None

CONTACTS (staff responsible): PEREA/STROUD

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**REGULATORY AND OTHER MATTERS
ITEM 10: OTHER MATTERS/REPORTS**

Other Matters/Reports from the General Manager and/or District staff may be provided at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:

Hear Other Matters/Reports that may have arisen after the posting of the agenda.

EXHIBITS

None

CONTACTS (staff responsible): PALUDI/PEREA