



PALMDALE WATER DISTRICT
A CENTURY OF SERVICE

2017 SANITARY SURVEY UPDATE

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OPERATIONS MANAGER

PALMDALE WATER DISTRICT

PALMDALE, CA 93550

AMANDA THOMPSON

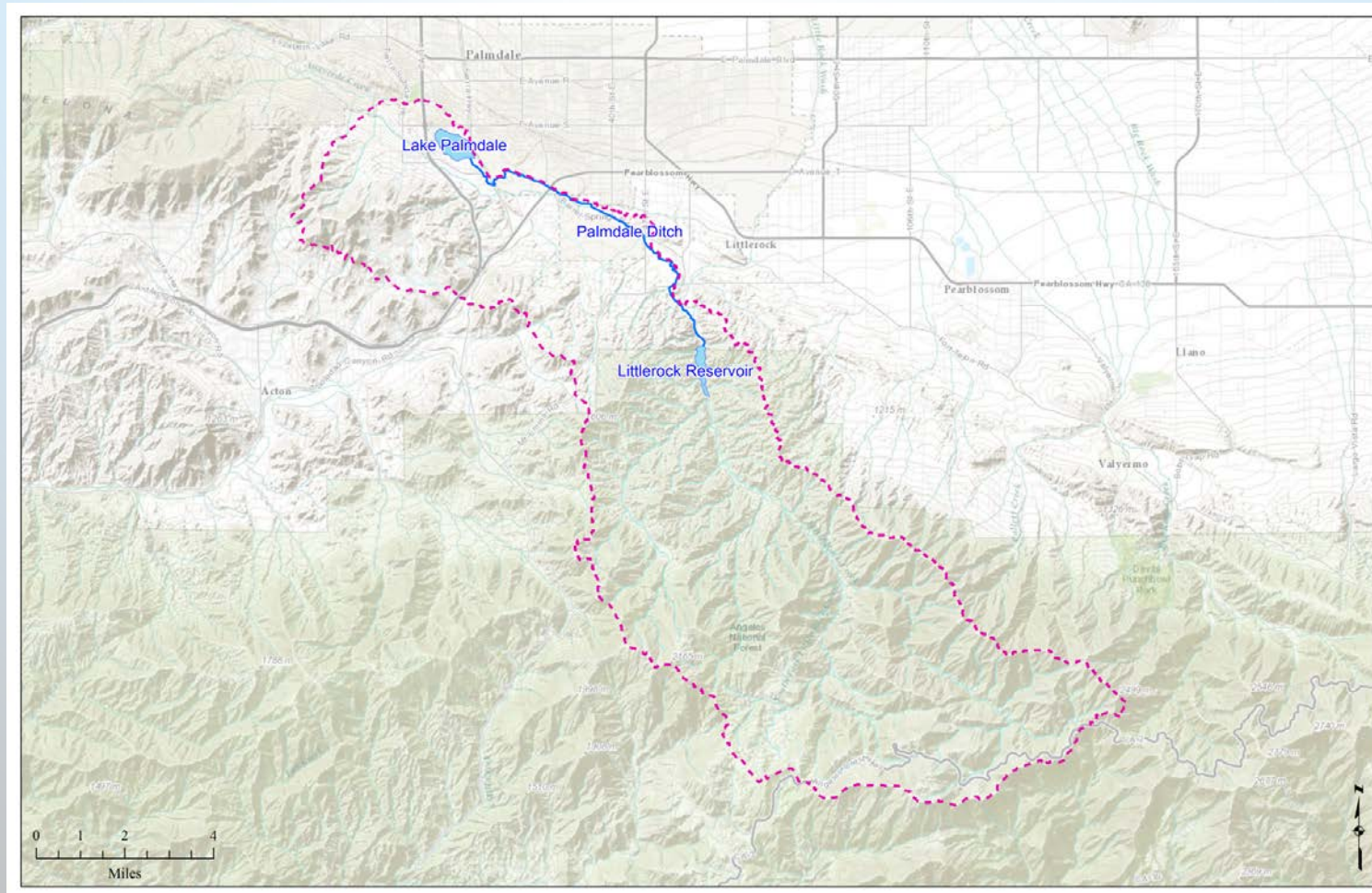
WATER QUALITY / REGULATORY AFFAIRS SUPERVISOR

AGENDA

- POTENTIAL WATER QUALITY THREATS
- SOURCE PROTECTION ACTIVITIES
- RAW WATER QUALITY
- TREATED WATER QUALITY
- REGULATORY COMPLIANCE
- RECOMMENDATIONS



WATERSHED BOUNDARY



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POTENTIAL THREATS IN IMMEDIATE VICINITY OF WATER SOURCES

RECREATION

- Littlerock Reservoir: Body-contact recreation, Camping
- Lake Palmdale: Boating, Hunting



POTENTIAL THREATS IN IMMEDIATE VICINITY OF WATER SOURCES

DUMPING

- PALMDALE DITCH AND AQUEDUCT CONNECTION

SPILLS AND LEAKS

- FOUR SPILLS WERE RECORDED IN THE VICINITY OF THE WATERSHED IN 2012, LESS THAN 75 GALLONS OF MATERIAL



WILDFIRES

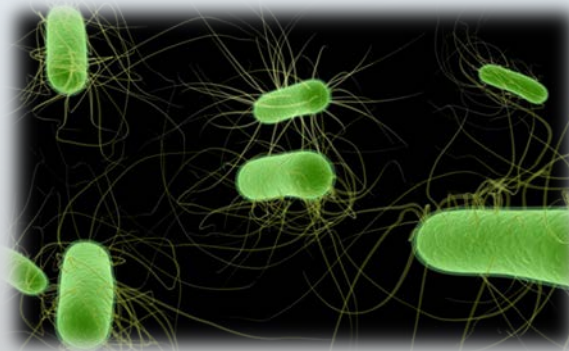
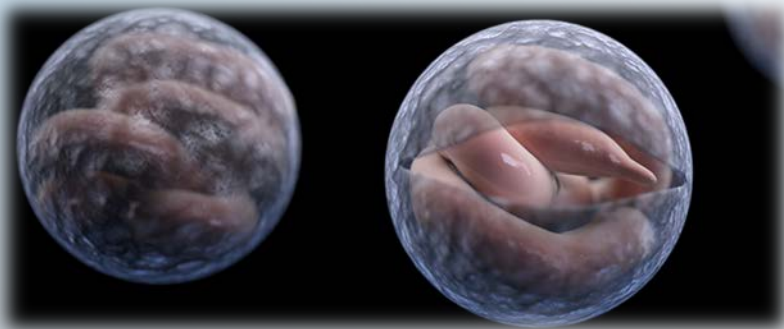
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- LEGEND**
- Fires (2012-2017)**
- Pleasant
 - Tovey
 - Vincent
- Map Projection: Lambert Conformal Conic**
 Central Meridian: -118
 Standard Parallel 1: 34
 Standard Parallel 2: 35.47
 False Easting: 656166.7
 False Northing: 1640416.7
- Scale:** 0 0.5 1 2 Miles
- BLACK & VEATCH**
- Fire Perimeters**
- Palmdale Water District Watershed Sanitary Survey**
- FIGURE 4-1**



POTENTIAL THREATS IN IMMEDIATE VICINITY OF WATER SOURCES

CONTAMINANTS OF CONCERN

- CRYPTOSPORIDIUM-GIARDIA, COLIFORMS, VOLATILE ORGANIC COMPOUNDS FROM FUEL



POTENTIAL THREATS IN IMMEDIATE VICINITY OF WATER SOURCES

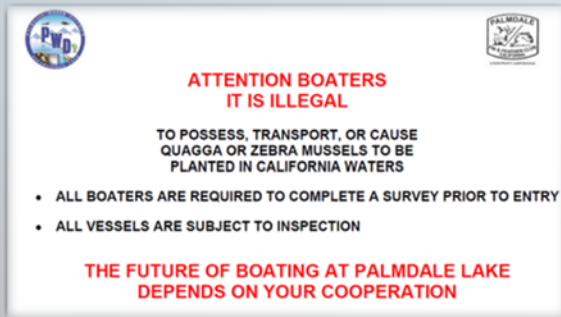
**THE MOST COMMON CONCERNS ARE MICROBIOLOGICAL CONTAMINANTS RELATED TO
HUMAN ACTIVITY**



MANAGEMENT ACTIVITIES

LAKE PALMDALE

- REGULATED BOATING FOR FISHING
- FIN & FEATHER CLUB AND PWD WORKING TOGETHER
- COPPER SULFATE TREATMENTS
- DAM INSPECTIONS
- WATER QUALITY SAMPLING



LITTLEROCK RESERVOIR

- PRIVATE BOATING DISCONTINUED
- CLOSED TO THE PUBLIC
- DAM INSPECTIONS
- WATER QUALITY SAMPLING



MANAGEMENT ACTIVITIES

COPPER SULFATE TREATMENT:



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MANAGEMENT ACTIVITIES

TREATMENT PLANT UPGRADES

- ADDITION OF POTASSIUM PERMANGANATE FEED SYSTEM FOR ALGAE CONTROL AND ENHANCED COAGULATION
- INTRODUCTION OF A NEW LIQUID COPPER SULFATE TREATMENT FOR LAKE ALGAE CONTROL
- SWITCHED COAGULANT AID CHEMICAL



MANAGEMENT ACTIVITIES

POTASSIUM PERMANGANATE SYSTEM:



WATER QUALITY MONITORING AND REGULATORY COMPLIANCE

AMANDA THOMPSON

WATER QUALITY / REGULATORY AFFAIRS SUPERVISOR

PALMDALE WATER DISTRICT

PALMDALE, CA 93550



RAW WATER QUALITY MONITORING



California Aqueduct (PWD Turnout)



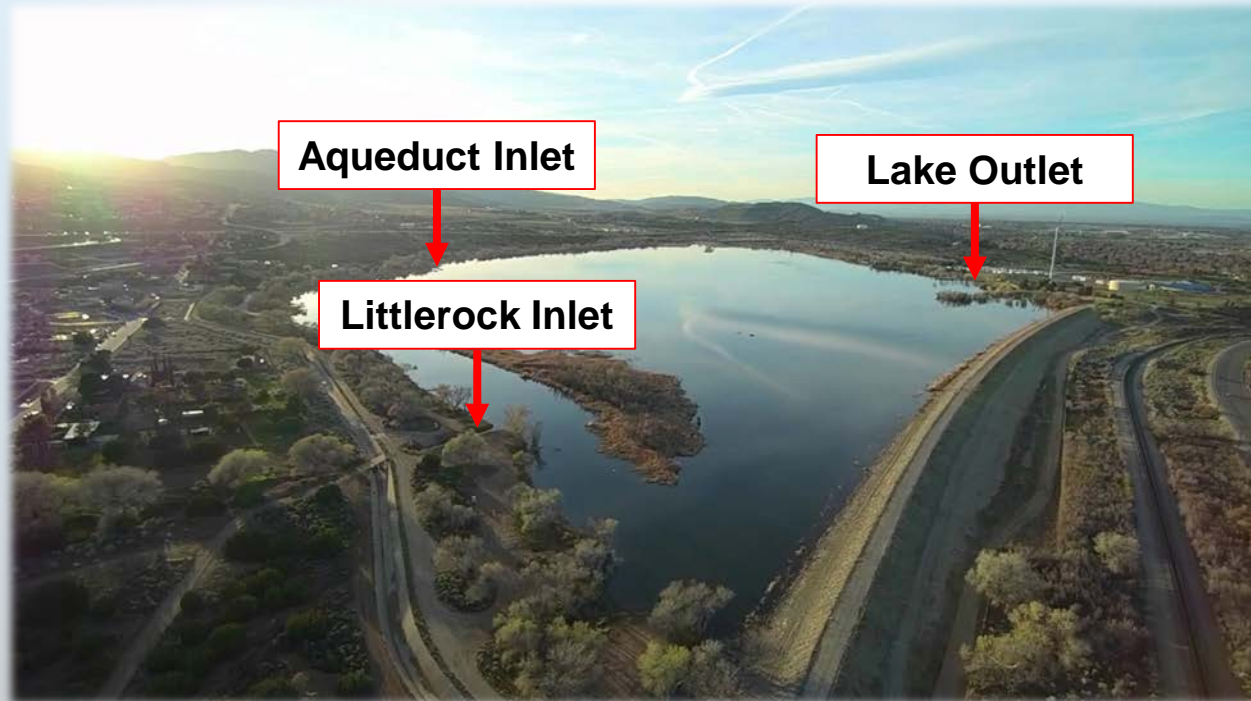
Littlerock Reservoir



Palmdale Lake



RAW WATER QUALITY MONITORING



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RAW WATER QUALITY MONITORING

- Monitored Parameters (Comparable to 2012 Sanitary Survey)
 - pH, Alkalinity, Turbidity, Microbiological
- Selected Results
 - No detection of *Giardia* or *Cryptosporidium*
 - Benzene, Toluene, Ethel Benzene and Xylene (BTEX): Low concentrations at boat ramp, not detectable at WTP intake
 - Algae: Generally low levels with a spike in 2016

Source water parameters generally varied within normal ranges



TREATED WATER QUALITY



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TREATED WATER QUALITY

- Monitored parameters (Comparable to 2012 Sanitary Survey)
 - pH, Alkalinity, Turbidity, Microbiological
- Treated water TOC has remained consistently lower due to GAC contactors
- No exceedances of enforceable primary MCLs noted in monitoring data
- Treated water scores highly on aesthetic measures

Treated water quality continues to meet current standards



REGULATORY COMPLIANCE



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REGULATORY COMPLIANCE SUMMARY – CURRENT

Regulation	Conclusion
Surface Water Treatment Rule (SWTR)	Continued compliance is anticipated.
Lead and Copper Rule	Revision to the Federal LCR were in progress at the time of this update. DDW to make revisions in 2018 to reflect Federal Rule.
Phase II, Phase V SOC/IOC Regulations	Continued compliance is anticipated.
Total Coliform Rule	Continued compliance is anticipated.
Revised Total Coliform Rule	Continued compliance is anticipated.
Stage 1 Disinfectants/Disinfection Byproducts Rule (Stage 1 DBP Rule)	Continued compliance is anticipated.
Stage 2 Disinfectants/Disinfection Byproducts Rule (Stage 2 DBP Rule)	Continued compliance is anticipated.
Interim Enhanced Surface Water Treatment Rule (IESWTR)	Continued compliance is anticipated.
California Interim Enhanced Surface Water Treatment Rule	Continued compliance is anticipated.
Long-Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR)	Continued compliance is anticipated.
Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR)	Continued compliance is anticipated.

Regulation	Conclusion
Consumer Confidence Reports Rule	Continued compliance is anticipated.
Radionuclides	Continued compliance is anticipated.
Filter Backwash Recycling Rule	Continued compliance is anticipated.
Arsenic Rule	Continued compliance is anticipated.
California MTBE Standard	Continued compliance is anticipated.
Ground Water Rule (GWR)	Compliance not evaluated here.
Unregulated Contaminant Monitoring Rules	Continued compliance is anticipated.
Public Notification Rule	Continued compliance is anticipated.
California <i>Cryptosporidium</i> Action Plan	Continued compliance is anticipated.
Perchlorate	Continued compliance is anticipated.

Continued compliance with these regulations is anticipated.



REGULATORY COMPLIANCE – FUTURE REGULATIONS

Regulation	Conclusion
Radon	Radon MCL has not yet been promulgated. Compliance is anticipated.
Hexavalent Chromium	DDW is currently establishing a new MCL. A Federal MCL has not been promulgated. Potential treatment requirements are not currently known. The impact on Palmdale WTP treatment requirements should be evaluated when more information is available.
Nitrosamines	Nitrosamines MCL has not yet been promulgated. Potential treatment requirements are not currently known.
Cyanotoxins	EPA is evaluating a possible cyanotoxin rule based on UCMR 4 monitoring results which is scheduled to be completed in 2020.
Strontium	A Federal MCL has not been established, however, a final rule is expected in 2019-2020. Continued compliance is anticipated for the State MCL.
Chlorate	A Federal MCL has not been promulgated; however, the EPA recognizes chlorate may be introduced or formed in public water systems and disinfection practices and therefore it is importance to evaluate chlorate in the context of reviewing existing Microbial and Disinfection Byproduct Regulations. Chlorate is also part of CCL 4.
VOCs	EPA is currently evaluating the regulation of Carcinogenic VOCs as a group rather than individual compounds. The ultimate form of the potential future regulation was undetermined at the time of this review.
Legionella	EPA's third year review (January 2017) highlights an opportunity to reduce risk posed by Legionella and links secondary disinfectant results to reduce the risk posed by Legionella.
1,2,3-TCP	At the time of this review, DDW had promulgated a proposed MCL of 0.000005 mg/L.

PWD intends to meet all future regulations.



2017 SANITARY SURVEY – RECOMMENDATIONS

- Monitoring
 - Organize water quality data in a database and prepare an annual review of trends
 - Conduct special monitoring for fire, spill, and storm events
- Ditch Access
 - Install and maintain fencing along the Palmdale Ditch right-of-way to prevent access.
 - Investigate feasibility of additional ditch enclosure
- Public Education and Outreach Efforts
 - Install signage indicating that Littlerock Reservoir & Lake Palmdale are drinking water sources.

Continue to collaborate with other stakeholders on source water protection and public education activities.



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