City of Riverside Public Works Department

UPDATE OF THE INTEGRATED
MASTER PLAN FOR THE WASTEWATER COLLECTION AND TREATMENT FACILITIES

VOL. 9

Additional Special Collection System Studies

JUNE 2019

Chapter 1: Introduction
Chapter 2: Sewers and Manholes in Close Proximity to Waters of the US
Chapter 3: SSO Reporting and Response
Chapter 4: Laboratory Compliance Audit
Chapter 5: Chemical Root Control SOP
Chapter 6: SSMP Update

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Abbreviations

αF	alpha factor
µg/L	micrograms per liter
A/A Trunk Sewer	Acorn/Arlanza Trunk Sewer
AACE	Advancement of Cost Engineering
AADF	annual average daily flow
AAF	average annual flow
AB	Assembly Bill
ABS	Acrylonitrile-Butadiene-Styrene
ACI	American Concrete Institute
ACP	asbestos cement pipe
ACS	American Community Survey
ACT treatment train	Activated treatment train
ADC	alternative daily cover
ADEQ	Arizona Department of Environmental Quality
ADF	average daily flow
ADWF	average dry weather flow
AFY	acre-feet per year
APAD	acid-phase anaerobic digestion
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
ARVs	air release valves
ASCE	American Society of Civil Engineers
AWT	Advanced Water Treatment
BACT	best available control technology
BCM	Best Available Control Measures for Fugitive Dust Sources
BFP	belt filter press
BMP	best management practices
BNR	Biological nutrient removal
BOD	biochemical oxygen demand
BOD_5	5-day biochemical oxygen demand
BPTC	Best Practicable Treatment or Control
Btu/lb	British thermal unit per pound
BWF	base wastewater flow
C	Celsius
$CaCO_3$	calcium carbonate
Carollo	Carollo Engineers, Inc.

CASA	California Association of Sanitation Agencies
CCB	chlorine contact basin
CCF	hundred cubic feet
CCI	Construction Cost Index
CCTV	Closed Circuit Television
CDFW	California Division of Fish and Wildlife
CDM	Camp Dresser & McKee, Inc.
CECs	Contaminants of Emerging Concern
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cfd	cubic feet per day
cfm	cubic feet per minute
cfs	cubic feet per second
CIP	Capital Improvement Program
City	City of Riverside
CIWQS	California's Integrated Water Quality System
CMB	Combustion Sources
CMMS	Computerized Maintenance Management System
CNG	compressed natural gas
CO_2	carbon dioxide
COD	chemical oxygen demand
COS	cost-of-service
cP	centipoise
CSCI	California Stream Condition Index
CSD	Community Services Districts
CTS	Coatings and Solvents
cu ft	cubic feet
CWA	Clean Water Act
CWC	California Water Code
CWEA	California Water Environment Association
DAF	dissolved air flotation
DAFT	dissolved air flotation thickeners
days/week	days per week
DCR	demand-capacity ratio
DDW	California Division of Drinking Water
DG	digester gas
DIR	Department of Industrial Relations
DMR	discharge monitoring report
DU	dwelling unit

DWF	dry weather flow
EBRT	empty bed residence time
EC	Emerging Constituents
EDR	electro-dialysis reversal
EDU	equivalent dwelling units
EGM	Emission Growth Management
EIR	Environmental Impact Report
EnerTech	EnerTech Environmental California, LLC
ENR	Engineering News Record
EPA	Environmental Protection Agency
EQ	equalization
ESA	Endangered Species Act
F	Fahrenheit
FDA	Food & Drug Administration
Flo-Dar	Marsh-McBirney Flo-Dar™
FLX	Compliance Flexibility Program
FOG	fats, oils, and grease
fps	feet per second
ft	feet
FTE	Full Time Employee
FUG	Fugitive Emissions
FY	fiscal years
g	grams
gal	gallons
GBT	gravity belt thickeners
GHG	Greenhouse Gas
GIS	Geographic Information System
GL	General Ledger
gpcd	gallons per capita day
gpd	gallons per day
gpd/ac	gallons per day per acre
gpm	gallons per minute
gpm/sq ft	gallons per minute per square feet
GWI	groundwater infiltration
H_2S	hydrogen sulfide
HGL	hydraulic grade line
HID	High-Intensity Discharge
hp	horsepower
hr	hour

hrs/day	hours per day
HS^-	hydrogen sulfide ion
HVAC	heating, ventilation, and air conditioning
I/I	Infiltration/inflow
IEBL	Inland Empire Brine Line
IEUA	Inland Empire Utilities Agency
in.	inch
iPACS	Internet-based POTW Administration and Compliance System
IRWD	Irvine Ranch Water District
IT	Information Technology
IWWMP	Integrated Wastewater Master Plan
klb/d	thousand pounds per day
klbN/d	thousand pounds of nitrogen per day
KPI	Key Performance Indicator
kWh	kilowatt hour
lbs	pounds
lbs/cfd	pounds per cubic feet per day
lbs/ft^3	pounds per cubic feet
LF	linear feet
LIMS	Laboratory Information Management System
LM	Longitudinal Motion
LOTO	Lock Out / Tag Out
LRO	legally responsible official
Master Plan	Integrated Master Plan for the Wastewater Collection and Treatment Facilities
MBR	Membrane Bioreactor
MBR treatment train	Membrane Bioreactor treatment train
MCC	motor control center
MCS	Multiple Component Sources
MDD	maximum day demand
MDL	Method Detection Limits
MF	microfiltration
MFR	multi-family residential
MG	million gallons
mg-min/L	milligrams per minute per liter
mg/L	milligrams per liter
mgd	million gallons per day
mgN/L	milligrams of nitrogen per liter
min	minute

min/hr	minutes per hour
ML&C	mortar lined and coated
MLSS	mixed liquor suspended solids
mm	millimeter
MMBtu	million British thermal units
MMBtu/hr	million British thermal units per hour
MMRP	Measurement, Monitoring and Reporting Procedures
MOB	Mobile Source Programs
MP	Master Plan
MPN	most probable number
MRP	Monitoring and Reporting Program
msl	mean sea level
mV	millivolt
N/L	nitrogen per liter
N_2O	nitrous oxide
NACWA	National Association of Clean Water Agencies
$NaHSO_3$	sodium bisulfite
NaOCl	sodium hypochlorite
NASSCO	National Association of Sewer Service Companies
NEC	National Electric Code
NELAC	National Environmental Laboratory Accreditation Conference
NELAP	National Environmental Laboratory Accreditation Program
NFPA	National Fire Protection Association
NGO	Non-Governmental Organizations
NH_3-N	ammonia nitrogen
NOAA	National Oceanic and Atmospheric Association
NOI	notice of intent
NO_X	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity unit
O&M	Operations and Maintenance
OCSD	Orange County Sanitation District
OERP	Overflow Emergency Response Plan
OES	Office of Emergency Services
OJT	On-the-Job Training
ORP	Oxidation-Reduction Potential
P/L	phosphorus per liter
PACP	Pipeline Assessment Certification Program
PAYGO	Pay-As-You-Go

PDR	Preliminary Design Report
PEIR	Programmatic Environmental Impact Report
PFRP	Process to Further Reduce Pathogens
PLC	programmable logic controller
POTW	Publicly Operated Treatment Work
ppbv	parts per billion by volume
ppcd	pounds per capita per day
ppd	pounds per day
ppd/cu ft	pounds per day per cubic feet
ppd/sq ft	pounds per day per square feet
pph	pounds per hour
ppm	parts per million
psf	pounds per square foot
psi	pounds per square inch
PTZ	Pan-Tilt-Zoom
PVC	Polyvinyl Chloride
PWS	potable water salinity
PWWF	peak wet weather flow
QICS	Qualitative Intelligence and Communication System
R&R	rehabilitation and repair
RAS	return activated sludge
RCNLD	Replacement Cost New Less Depreciation
RCP	reinforced concrete pipe
RDII	Rain Derived Infiltration and Inflow
RDT	rotary drum thickeners
RECLAIM	Regional Clean Air Incentives Market
Regional Board	California Regional Water Quality Control Board
RG	rain gauge
RNG	renewable natural gas
RO	reverse osmosis
RPU	Riverside Public Utilities
RST	rotary screw thickeners
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
RWQCP	Regional Water Quality Control Plant
S_2^-	sulfide ion
SARDA	Santa Ana River Dischargers Association
SART	Santa Ana River Trail
SB	Senate Bill

sBOD	Soluble biochemical oxygen demand
SBT	sludge blending tank
SCADA	supervisory control and data acquisition
SCAG	Southern California Association of Governments
SCAP	Site Cleanup Subaccount Program
SCAQMD	South Coast Air Quality Management District
scfm	standard cubic feet per minute
sCOD	soluble chemical oxygen demand
SECAP	System Evaluation and Capacity Assurance Plan
SFR	single-family residential
SFY	square feet per year
SIU	Significant Industrial Users
SLCP	Short Lived Climate Pollutant
SLR	solids loading rate
SOC	Strengths, Opportunities, and Concerns
SOP	Standard Operating Procedures
SOR	surface overflow rate
South Star	South Star Engineering & Consulting, Inc.
SO_X	Sulphur oxides
sq mi	square mile
SQR	Structural Quick Rating
SRF	State Revolving Fund
SRT	solids retention time
SS	stainless steel
SSC	Sustainable Communities Strategy
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflows
State Water Board	California State Water Resources Board
SWMM	Storm Water Management Model
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
TIN	total inorganic nitrogen
TKN	total Kjeldahl nitrogen
TL	
TM	Technical Memorandum
TMDL	total maximum daily load
TN	total nitrogen
TOC	total organic carbon
TP	total phosphorus

TS	total solids
TSS	total suspended solids
TST	Test for Significant Toxicity
URS	URS Corporations
USACE	United States Army Corps of Engineers
USBR	U.S. Department of the Interior Bureau of Reclamation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UV/AOP	Ultraviolet/Advanced Oxidation Process
V&A	V&A Consulting Engineers
VCP	Vitrified Clay Pipe
VFA	volatile fatty acids
VFD	variable frequency drive
VSR	volatile solids reduction
VSS	volatile suspended solids
WaPUG	Wastewater Planning Users Group
WAS	waste activated sludge
WDR	Waste Discharge Requirements
WLAM	Waste Load Allocation Model
WMWD	Western Municipal Water District
WQMP	Water Quality Management Plan
WRCRWA	Western Riverside County Regional Wastewater Authority
wt	wet ton
WTPD	wet tons per day
WWTP	wastewater treatment plant
ZLD	Zero Liquid Discharge

City of Riverside Public Works Department

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MASTER PLAN FOR THE WASTEWATER COLLECTION AND TREATMENT FACILITIES

VOL. 9

CHAPTER 1

Additional Special Collection System Studies

Introduction

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City of Riverside Public Works Department

Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities

VOLUME 9: ADDITIONAL SPECIAL COLLECTION SYSTEM STUDIES

CHAPTER 1: INTRODUCTION

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City of Riverside Public Works Department
Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities

VOLUME 9: ADDITIONAL SPECIAL COLLECTION SYSTEM STUDIES

CHAPTER 1: INTRODUCTION

Carollo Project No. 10495A00

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Appendix 1A River Watch Agreement

Chapter 1

INTRODUCTION

1.1 Purpose

The purpose of Volume 9 is to document additional collection system studies completed pursuant to the Agreement between California River Watch and the City. The River Watch Agreement is included in Appendix 1A. In this agreement, the City was tasked with the following:

- Investigate and repair the sewer collection system: Described in detail in Volume 9, Chapter 2, Sewers and Manholes in Close Proximity to Waters of the United States.
- Develop an SSO reporting and response protocol: Described in detail in Volume 9, Chapter 3, SSO Reporting and Response.
- Conduct an audit of the RWQCP laboratory performance and procedures: Described in detail in Volume 9, Chapter 4, Laboratory Compliance Audit.
- Produce an SSO Reporting and Outreach Program specifically targeting private lateral inspection and repair initiatives. This work is being completed by the City separately from the work contained within this Volume.
- Prepare an SOP for Chemical Root Control application methods: Described in detail in Volume 9, Chapter 5, Chemical Root Control SOP.
- Update the SSMP: Modifications to the City's existing SSMP specifically related to the River Watch Agreement are discussed in detail in Volume 9, Chapter 6, SSMP Update.

The following sections provide a summary of each Chapter presented in this Volume.

1.2 Sewers and Manholes in Close Proximity to Waters of the United States

Volume 9, Chapter 2 summarizes the inspection and evaluation of the City's existing collection system per the Agreement. Inspections were conducted via CCTV for sewer lines and manholes identified as being within 500 feet of waters of the United States. Each inspected manhole and pipeline was assigned a grade using the PACP and MACP programs developed through the NASSCO. Once the inspections were completed, the City was to develop a Renewal Program to fulfill the requirements of the Agreement. Volume 9, Chapter 2 outlines the fundamentals of that Renewal Program and recommends specific projects based on the investigations conducted by the City's CCTV contractor.

1.3 SSO Reporting and Response

The California SWRCB requires that all municipalities and districts with over one mile of sanitary sewer pipelines develop an SSMP. One component of the SSMP is an OERP. Carollo reviewed and revised the City's existing OERP to ensure compliance with the Statewide WDRs. Volume 9, Chapter 3 summarizes updates made to the City's Final OERP, as well Carollo's additional recommendations regarding the OERP.

1.4 Laboratory Compliance Audit

As part of the River Watch Agreement task items included in Volume 9 of the update to the Master Plan, Carollo contracted William Ray Consulting, LLC. to perform an assessment of the RWQCP Laboratory analytical operating procedures and associated quality management system. The assessment included a documentation review as well as an onsite visit consisting of further document review, observation of staff performing analytical procedures, and observation of equipment operation. Volume 9, Chapter 4 discusses the results of this audit in detail.

1.5 Chemical Root Control SOP

As part of the River Watch Agreement task items included in Volume 9 of the update to the Master Plan, details regarding the implementation and SOP's for the application of chemicals to control root incursion into the pipelines was required. As roots invade pipelines and manholes, they cause cracks and fissures in the collection system leading to sanitary sewer contamination incidents. The use of chemicals to control root ingress is required to minimize damage. The purpose of this Chapter is to summarize the development of the chemical root control SOP's. Four application methods were identified; each method has a designated SOP included in the Appendices of Volume 9, Chapter 5.

1.6 Update to the SSMP

Pursuant to the River Watch Agreement, updates or recommendations to the SSMP identified by Carollo are discussed in detail in Volume 9, Chapter 6. The recommendations made in this Chapter relate to areas of concern identified in the other chapters of Volume 9 and are intended to provide clarity and/or address deficiencies in the City's SSMP to satisfy the requirements of the River Watch Agreement.

Appendix 1A

RIVER WATCH AGREEMENT

TERMS AND CONDITIONS

1. Parties Bound By This Agreement and Length of Agreement. This Agreement, and each of its provisions, including all representations, warranties, and promises contained herein, binds, and inures to the benefit of CRW and the City, and each of their respective assigns, present and future affiliates, parents, subsidiaries, predecessors and successors in interest whether by merger, consolidation, or otherwise, as well as their respective representatives, agents, and administrators, past, present, and future. The "Termination Date" of this Agreement is upon City submittal of the final and approved 2016 Wastewater Master Plan document to CRW.

2. Actions by the City. In exchange for the delivery, execution, and performance of this Agreement and of the Release by CRW as provided herein, the City shall perform the below-specified projects. The City reserves the right, in its sole discretion, to determine: (i) which persons shall perform any work described herein, including contractors; and (ii) the scope and technical details of, and the manner to implement, such work subject to review and approval by the Regional Water Quality Control Board (or such other regulatory agency as may, from time to time, exercise jurisdiction with respect to environmental matters under SWRCB Order No. R8-2013-0016, NPDES No. CA0105350 (the "Permit"). The City shall:

2.1. Sewer Collection System Investigation and Repair

2.1.a. Definitions

i. Condition Assessment: A report that comprises inspection, rating, and evaluation of the existing condition of a sewer collection system. Inspection is based upon closed circuit television ("CCTV") inspections for sewer lines; manhole inspections for structural defects; and inspections of pipe connections at the manhole. After CCTV inspection occurs, pipe conditions are assigned a grade such as the Pipeline Assessment and Certification Program ("PACP") rating system, developed by the National Association of Sewer Service Companies.

ii. Full Condition Assessment: A Condition Assessment of all sewer lines in the sewer collection system.

iii. Surface Water Condition Assessment: A Condition Assessment of sewer lines in the sewer collection system located sufficiently proximate to Waters of the United States, which if defective, could allow exfiltration to that surface water. Whether a line is "sufficiently proximate" will depend upon a number of factors including age, composition and PACP rating of the sewer line in question, the nature of the defect, soil types, and groundwater patterns.

iv. Significantly Defective: A sewer pipe is considered to be Significantly Defective if its condition receives a Structural or Operation and Maintenance grade of 4 or 5 based on the PACP rating system. The PACP assigns grades based on the significance of the defect, extent of damage, percentage of flow capacity restriction, and/or the amount of pipe wall loss due to deterioration. Grades are assigned as follows:

5 – Most significant defect
4 – Significant defect
3 – Moderate defect
2 – Minor to moderate defect
1 – Minor defect.

2.1.b Consistent with the City's 2016 Wastewater Master Plan, the City shall repair or replace all sewer lines and manholes in the City's sewer collection system sufficiently proximate to a Water of the United States and determined to pose a risk of exfiltration to that surface water which have been CCTV'd and were rated as Significantly Defective or given a comparable assessment.

2.1.c. Consistent with the City's 2016 Wastewater Master Plan, the City shall complete a Surface Water Condition Assessment of sewer lines and manholes.

2.1.d. Consistent with the City's 2016 Wastewater Master Plan, after completion of the Surface Water Condition Assessment conducted pursuant to paragraph 2.1.c., the City shall:

i. Repair or replace all sewer lines and/or manholes found to be Significantly Defective with a rating of 4 or 5 based on the PACP rating system;

ii. Repair or replace sewer pipe segments containing defects with a rating of 3 based on the PACP rating system within the ten (10) year condition assessment cycle, if such defect resulted in a SSO, or, if in the City's discretion, such defects are in close proximity to Significantly Defective segments that are in the process of being repaired or replaced.

2.1.e. Consistent with the City's then-current Wastewater Master Plan, the City shall perform a Condition Assessment of all sewer lines, manholes, and segments, but no less often than at least every ten (10) years, except for those sections which were repaired or replaced within ten (10) years after the scheduled inspection.

2.2. SSO Reporting and Response

2.2.a. The City shall ensure and as necessary modify its Backup and SSO

Response Plan to include the following items in its reports submitted to the CIWQS State Reporting System:

i. The method or calculations used for estimating total spill volume, spill volume that reached surface waters, and spill volume recovered;

ii. For Category I and II Spills, the City shall take every reasonable step to contact nearby residences or business owners to attempt to establish the SSO start time, duration, and flow rate, if such start time, duration, and flow rate have not been otherwise reasonably ascertained, such as from a caller who provides information that brackets a given time that the SSO began; and,

iii. Taking of photographs of the manhole flow at the SSO site using either the San Diego or Central Coast Method array (if applicable to the SSO), or other photographic evidence that may aid in establishing the spill volume.

2.2.b. The City shall ensure that it is in full compliance with its legal obligation under State Water Resources Control Board Order No. 2006-0003-DWQ - *Statewide General Waste Discharge Requirements For Sanitary Sewer Systems* ("Statewide WDR").

Compliance with the Statewide WDR includes, but is not limited to, the preparation of a Sewer System Management Plan ("SSMP"), and complying with the requirements in Section D.7.v. to develop and implement an adequate spill response training and sampling program to determine the nature and impact of all SSOs. The City shall implement and place in its Sewage System Overflow Emergency Response Plan ("OERP") the following detailed cleanup and disinfection procedures including methods and chemicals used to reduce the potential for human health risks and adverse environmental impacts that are associated with an SSO event:

i. For Category 1 spills requiring a technical report, spills over an estimated 50,000 gallons, or posing an imminent and substantial threat to public health, sampling for human specific pathogens or human markers to ensure the protection of human health and the environment.

ii. In any area in which the City cannot confirm that the public can be kept from unmitigated infectious materials from an SSO, the City shall post appropriate public notification signs and place barricades to keep vehicle and pedestrians away from contact with spilled sewage. For example, signs will be posted at creeks and streams that have been contaminated as a result of an SSO and at visible access locations until the risk of exposure has

subsided to acceptable background levels. Warning signs should be checked every day to ensure that they are still in place. Major spills warrant broader public notice. For major spills, the City shall contact local media when significant areas may have been contaminated by sewage and may pose a danger to public health. The signs and other public notices will not be removed until the water quality sample results indicate satisfactory levels or the Health Department has determined there is no further risk to public health and the environment.

2.2.c. Water quality sampling and testing is required to determine the extent and impact of the SSO whenever there is an SSO that either enters a surface water or is discharged to a surface where it poses a risk to public health or the environment. The water quality sampling procedures shall include:

i. Properly trained personnel shall collect samples if required. Samples should be collected as soon as possible after the discovery of the SSO event.

ii. The water quality samples should be collected, where feasible, from upstream of the spill, from the spill area, and downstream of the spill in flowing water. In addition, samples should be collected near the point of entry of the spilled sewage and at intervals along the shore or impoundment appropriate for representative sampling.

iii. Pursuant to the Statewide WDR, Section on D subsection 7, the City shall sample to determine the nature and extent of any SSO. The water surface basic analyses shall include fecal coliform, biochemical oxygen demand (BOD), dissolved oxygen, and ammonia. The hard surface basic analyses shall include total coliform, fecal coliform and ammonia. Additional samples will be taken to determine when posting of warning signs can be discontinued.

iv. If the SSO poses an imminent and substantial endangerment to public health or the environment that cannot be fully eliminated through compliance with the City's current SOPs, the City shall consult a qualified biologist, health care specialist or equivalent professional to mitigate the effects of the SSO on the environment.

2.2.d. The City shall, on the appropriate websites, create a link from the websites to the CIWQS SSO Public Reports and to SSO Reporting. Notification shall be given by the City to all customers and other members of the public of the existence of the web-based reporting system, including a commitment to respond to private parties submitting overflow reports.

2.3. Laboratory Quality Compliance Audit

Within one (1) year after the Effective Date, the City shall hire an independent audit firm to conduct a "Laboratory Quality Compliance Audit" ("Quality Audit") to ensure the laboratory has quality systems in place, follows good laboratory practices, and generates data of integrity and quality.

The Quality Audit will be performed to analyze the effectiveness and implementation of programs designed to ensure that the procedures and the laboratory's Standard Operating Procedures ("SOPs") related to testing activities are being followed. The Quality Audit shall:

i. determine the effectiveness of the laboratory's procedures in controlling the quality of data reported;

ii. identify, correct, and implement any changes needed in any of the quality system and testing activities procedures found to be deficient; and

iii. ensure all deficiencies in the laboratory's quality system and testing activities are documented though a corrective action process.

The City shall provide River Watch with the name of the company hired to conduct the Quality Audit and the scope of work at least thirty (30) days prior to the Quality Audit. Riverside will provide River Watch results of the Quality Audit within 30 days after receipt of the Audit.

2.4. Private SSO Reporting and Outreach Lateral Inspection/Repair Program

Following the Effective Date of this Agreement, the City shall publish on the City's website a link to the CIWQS site, which contains information on City inspections of private sanitary sewer systems. Within six (6) months after the Effective Date of this Agreement, the City shall initiate a public outreach program to City Realtors informing them of the City's Code requirements.

2.5. Chemical Root Control

2.5.a The City shall use chemicals approved and/or recommended by the federal Environmental Protection Agency or Regional Water Quality Control Board. All application shall, consistent with the City's written SOP, comply with the recommendations of the manufacturer of the chemical and as required by Cal-OSHA. Within one (1) year after execution of this Agreement, the City shall develop methods for the application of root control agents that lessen the incident of these agents escaping the collection system and keeping the public informed. These methods shall include:

ii. Using root control agents with breakdown products non-toxic to aquatic plants or animals;

iii. Developing and implementing best management practices to preclude the unintended escape of the root control agent from the sewer line;

iv. Recordkeeping that includes identifying the PACP rating in the section being treated if known; a map identifying locations where treatment occurs; the chemical(s) used including the MSDS sheets; and the amounts applied;

v. Not applying any root control agent to any sewer line that has a known PACP rating of 4 or 5 unless the City can ensure that no significant amount of the root control agent will escape the sewer line through any line defect;

vi. Not knowingly applying any root control agent in any location where groundwater can be contaminated via infiltration or exfiltration; and

vii. Verifying through CCTV'ing of the sewer lines prior to the expiration of the applicable warranty that the root control agent applied worked effectively to remove the identified root(s).

2.5.b. The City shall post on its website a map showing where a root control agent may be used throughout the sewer system and provide a contact number for the City to respond to questions.

2.5.c. These requirements shall be included in the City's 2016 Integrated Collection and Treatment Master Plan Update Project.

2.6. SSMP. The City's SSMP shall, consistent with the City's 2016 Integrated Collection and Treatment Master Plan Update Project, be kept current and properly certified. All documents relating to the certification shall be provided on the City's Department of Public Works website.

2.7. Staff Training. The City shall continue to train and certify all City sanitation staff through the California Water Environment Association in "collection system maintenance." All current sewer maintenance crew members shall, to the greatest extent possible, have a Certification of Collections 1 within one year after assignment. All new hires in the sewer maintenance crew shall receive such certification and training, provided it does not interfere with their Union contracts.

City of Riverside Public Works Department

UPDATE OF THE INTEGRATED
MASTER PLAN FOR THE WASTEWATER COLLECTION AND TREATMENT FACILITIES

VOL. 9

CHAPTER 2

Additional Special Collection System Studies

Sewers and Manholes in Close Proximity to Waters of the US

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Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities

VOLUME 9: ADDITIONAL SPECIAL COLLECTION SYSTEM STUDIES

CHAPTER 2: SEWERS AND MANHOLES IN CLOSE PROXIMITY TO WATERS OF THE US

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Chapter 2

SEWERS AND MANHOLES IN CLOSE PROXIMITY TO WATERS OF THE US

2.1 Purpose

The purpose of this Chapter is to summarize the inspection and evaluation of the City's existing collection system in close proximity to Waters of the United States as required by the River Watch Agreement with California River Watch. Inspections were based upon CCTV inspections for sewer lines and manholes. Following the inspection, the footage was reviewed and each pipe and manhole was assigned a grade using PACP and Manhole Assessment Certification Program, respectively, developed by the NASSCO. These evaluations were used to describe and develop a gravity main and manhole renewal program to satisfy the River Water Agreement.

2.2 Background

The City had developed a collection system CCTV inspection program that will inspect the entire gravity main portion of the collection system, more than 800 miles, every ten years. This would include all sewers in proximity to Waters of the United States. However, as a result of the Agreement between California River Watch and the City, some of the CCTV inspection studies were undertaken sooner in order for the City to comply with the following:

- Perform a condition assessment of all sewer lines in the collection system.
- Perform a condition assessment of sewer lines "located sufficiently proximate to Waters of the United States, which if defective, could allow exfiltration to that surface water."
- Assign a Structural or O&M grade based on the PACP rating system.
- Repair or replace all sewer lines and manholes "sufficiently proximate to Waters of the United States and determined to pose a risk of exfiltration to that surface water which have been visually inspected and were rated as significantly defective or given comparable assessment" in which "significantly defective" is defined as anything given a structural or O&M grade of 4 or 5.
- Repair or replace all sewer lines and/or manholes found to be Significantly Defective with a rating of 4 or 5 based on the PACP rating system.
- Repair or replace sewer pipe segments containing defects with a rating of 3 based on the PACP rating system within the 10 year condition assessment cycle, if such defect resulted in a SSO, or, if in the City's discretion, such defects are in close proximity to Significantly Defective segments that are in the process of being repaired or replaced.

The scope of this Chapter covers sewer lines "located sufficiently proximate to Waters of the United States, which if defective, could allow exfiltration to that surface water." Figure 2.1 shows Waters of the United States within the City's service area.

It was assumed that pipes within 500 ft of Waters of the United States are sufficiently proximate and were therefore flagged for inspections. Figure 2.2 shows gravity sewers that are within

500 feet of Waters of the United States. Approximately 158 miles of gravity mains and 3,459 manholes were identified through the City's GIS database as being within 500 feet of Waters of the United States. Approximately four miles of gravity sewers had a recent CCTV inspection and did not need to undergo another CCTV inspection. The remaining 154 miles were scheduled to be CCTV inspected by Houston and Harris PCS, Inc. As of June 26, 2019, approximately 136 miles of sewer (86 percent) have completed CCTV inspection. Additionally, approximately 2,740 manholes (79 percent) have been inspected. The remaining 22 miles of gravity sewer and 707 manholes are scheduled to be completed in the next 5 years.

2.3 Condition Assessment

This section discusses the method used to evaluate the condition of gravity sewers using CCTV inspection data. Carollo was responsible for evaluating gravity sewers with existing CCTV data, while Houston and Harris PCS, Inc. was responsible for evaluating sewers and manholes without an inspection record.

The PACP scoring standard uses a combination of two components to determine the overall condition of a pipe segment. The first uses a scale of 1 through 5 to denote the severity of each defect. Appendix 2A includes examples of defects and respective defect grade. The descriptions of the five defect categories are summarized in the following:

- 5: Most significant defect.
- 4: Significant defect.
- 3: Moderate defect.
- 2: Minor to moderate defect.
- 1: Minor defects.

The second component of the PACP system a PACP Structural or O&M Quick Rating score which is assigned for each pipe segment and used to develop a Renewal Program. The Quick Rating Scores use a systematic assignment of scores to prioritize defects. Figure 2.3 summarizes NASSCO's PACP Quick Rating system. This system is comprised of a four-character code corresponding with the following:

1. Highest severity grade.
2. Total number of occurrences of the highest severity grade.
3. Second highest severity grade.
4. Total number of occurrences of the second highest severity grade.

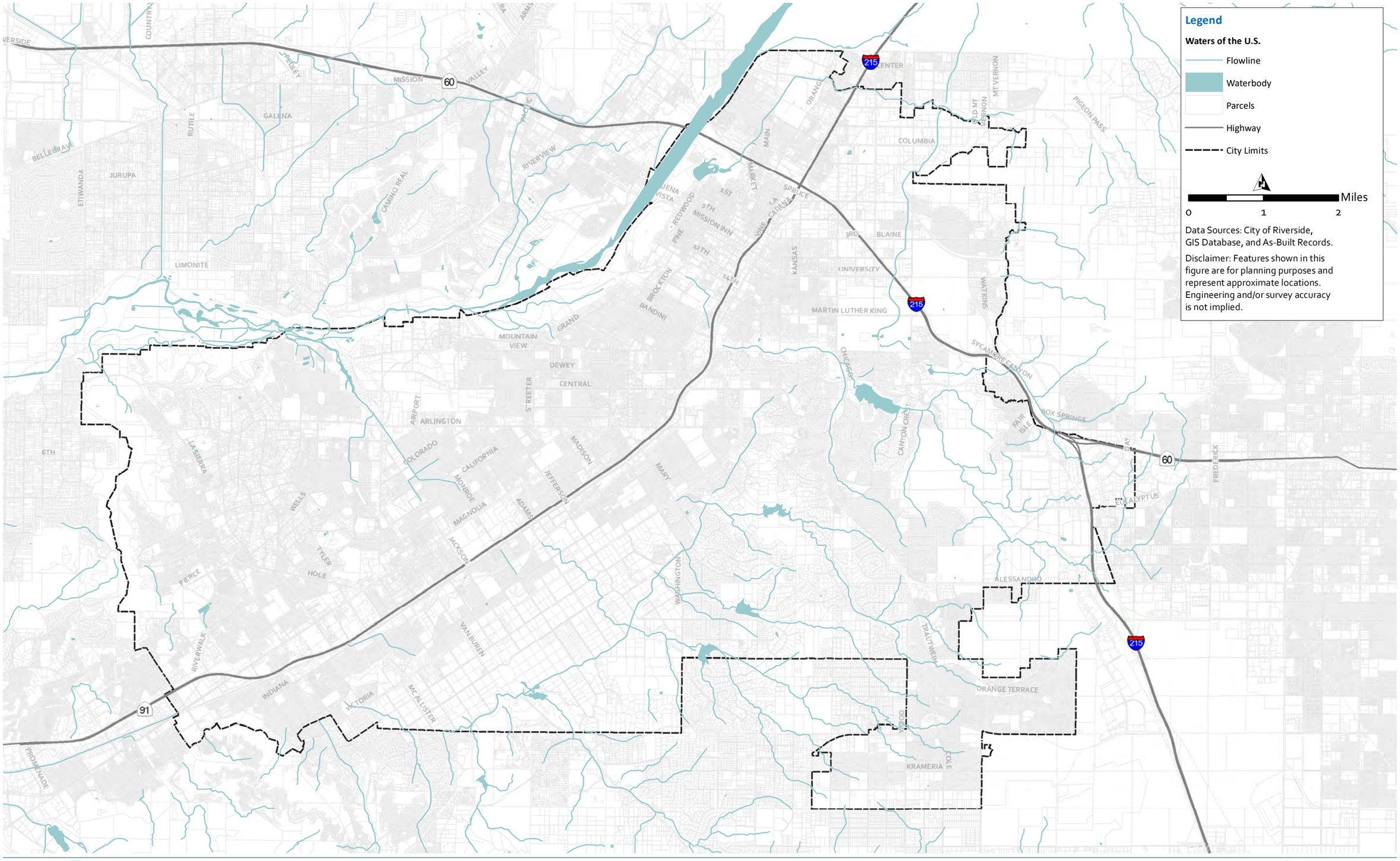

Figure 2.1 Waters of the United States

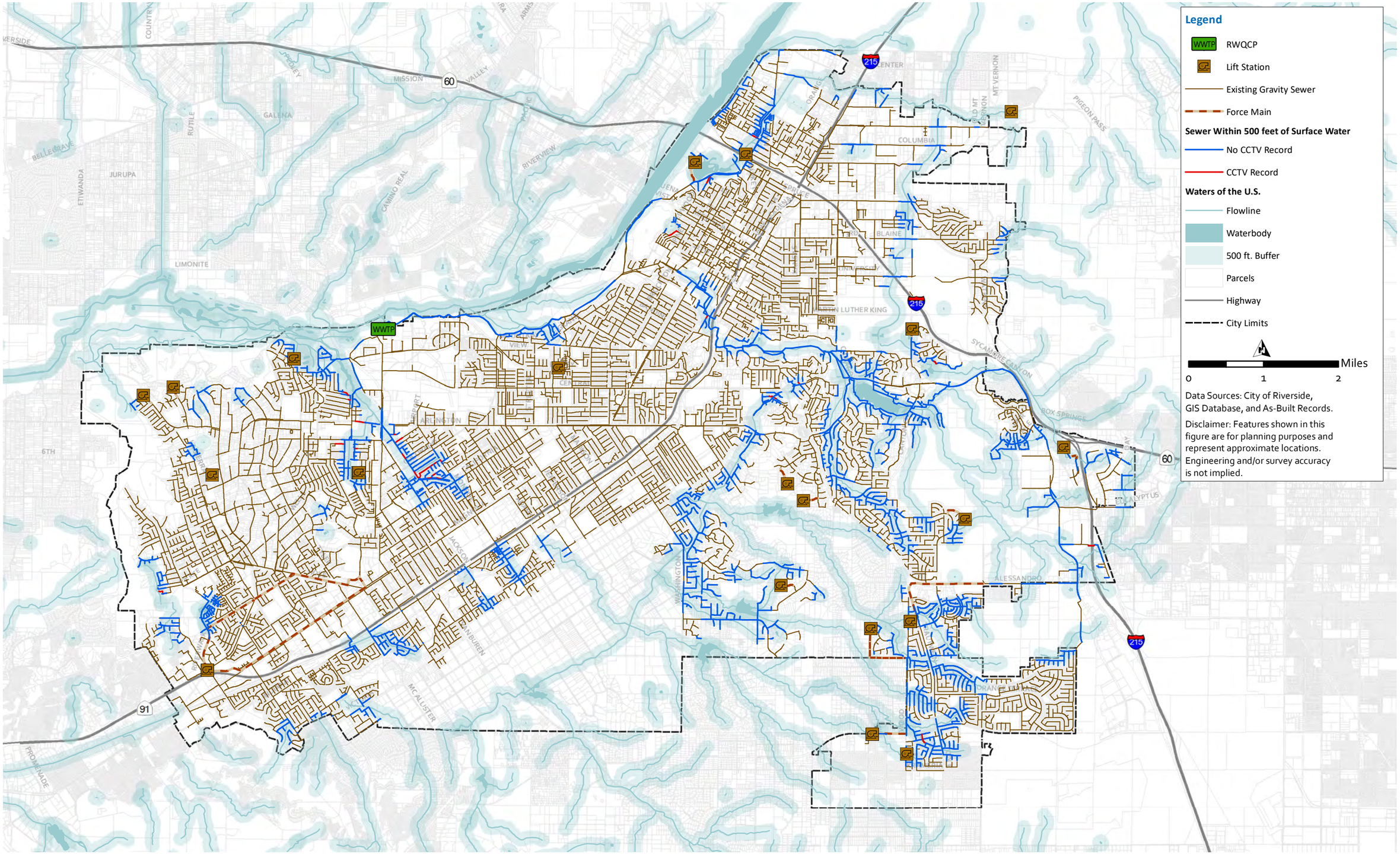

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Figure 2.2 Gravity Mains and Manholes within 500-feet of Waters of the United States

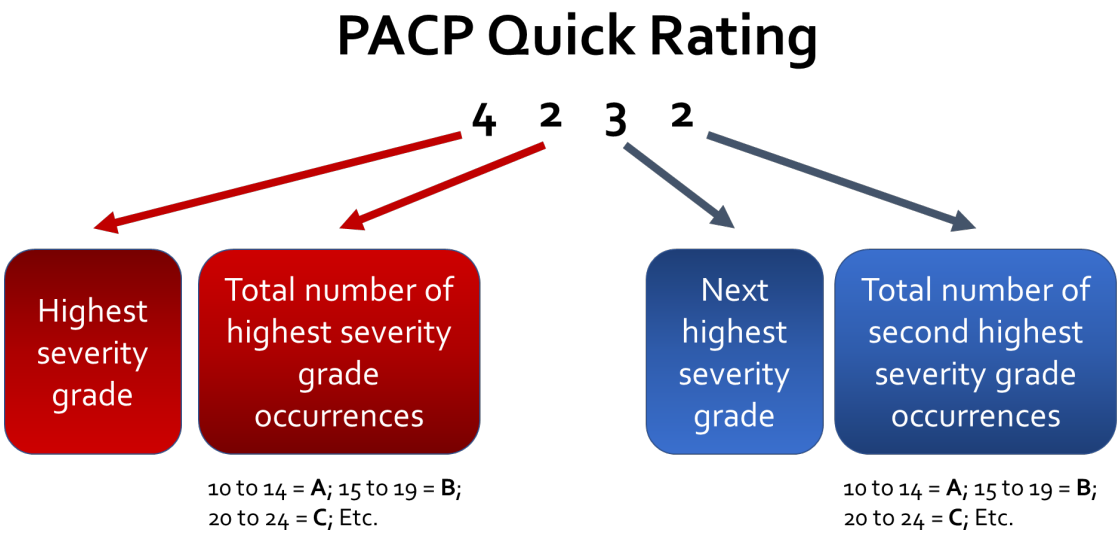

Figure 2.3 PACP Quick Rating

All pipe segments and manholes are prioritized and reported by their highest defect grade meaning that in the example given in Figure 2.3, the entire pipe segment represented by the PACP Quick Rating would be given a Grade 4 rating. This allows for summarization of defects as discussed in the following section without artificially representing or duplicated defects.

2.3.1 Gravity Main Evaluation Findings

This section summarizes gravity sewer evaluation findings. As indicated by the formulation of the PACP Quick Rating, each pipe segment could have multiple defects, some more serious than others. Table 2.1 summaries the defect grades identified in relation to the total length of each segment (Gravity Main Length in Survey) as well as the cumulative length of each defect (Gravity Main Length Impacted). Some defects, like sag, impact the whole length of pipe while others, like cracks or fractures, impact only a portion of the pipe. For example, Table 2.1 shows that 4.8 miles of gravity main were assigned a Grade 5 rating (based on the highest defect observed), but only 3.3 miles of that 4.8 miles are defective and require correction. Figure 2.4 depicts the quantity of each grade as the highest-grade defect for all gravity sewers in proximity to Waters of the United States. As shown on Figure 2.4, most pipes (70 percent) had Grade 1 Structural or O&M defects as the highest defect in the pipeline; implying that the majority of the pipes are in good condition. Figure 2.5 shows the cumulative length of each defect identified. Of the 136 miles surveyed in proximity to Waters of the United States, 13.4 miles have identified defects. Only 7.2 miles of pipe in proximity to Waters of the United States have significant structural defects and 2.3 miles of pipe have significant O&M defects that need to be addressed. Figure 2.6 and Figure 2.7 show the locations of the final defect grade assigned to gravity mains for structural and O&M, respectively. Appendix 2B includes the gravity condition assessment summary and structural and O&M grades.

Table 2.1 Defect Grade Summary - Gravity Main

Defect Grade	Gravity Main Length in Survey(1) (miles)		Gravity Main Length Impacted(1)(3) (miles)		Percent (%) in Survey		Percent (%) of Impacted(2)	
	Structural	O&M	Structural	O&M	Structural	O&M	Structural	O&M
5	4.8	1.7	3.3	0.4	3.1	1.1	24.7	3.3
4	6.1	7.0	3.9	1.9	3.9	4.4	29.4	14.0
3	6.1	10.9	4.9	2.8	3.9	6.9	37.0	21.3
2	7.4	6.7	0.2	0.9	4.7	4.3	1.3	6.7
1	111.7	109.8	1.0	7.3	70.8	69.6	7.6	54.7
Unknown	21.7	21.7	21.7	21.7	13.7	13.7	N/A	N/A

Notes:
(1) Source: Houston & Harris PCS, Inc.
(2) Percent of impacted gravity mains compares the number of a specific type of defect, by length of impacted, to the total length of impacted pipes. Gravity mains that need inspection are not included in the total percentage of impacted pipelines.
(3) Each spot repair assumes a length of 10 feet is repaired.

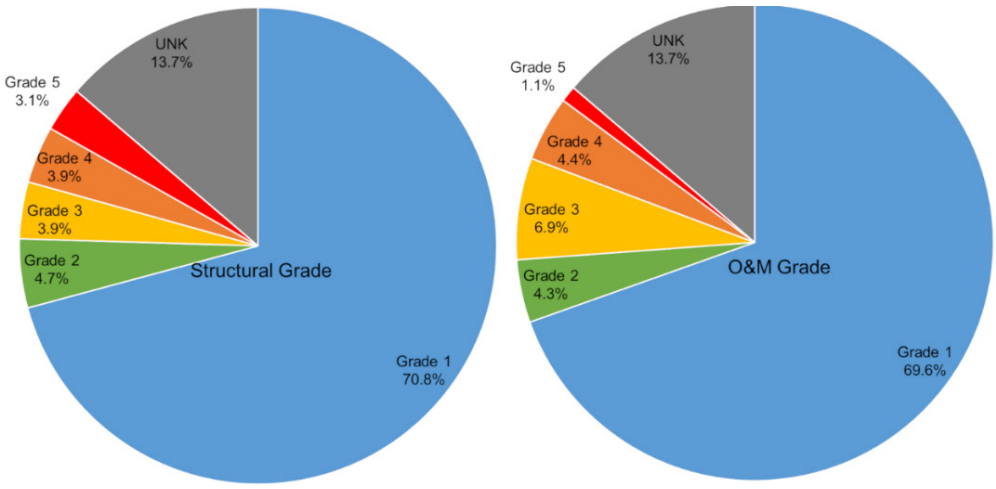

Figure 2.4 Quantity of each Defect Grade - Gravity Mains

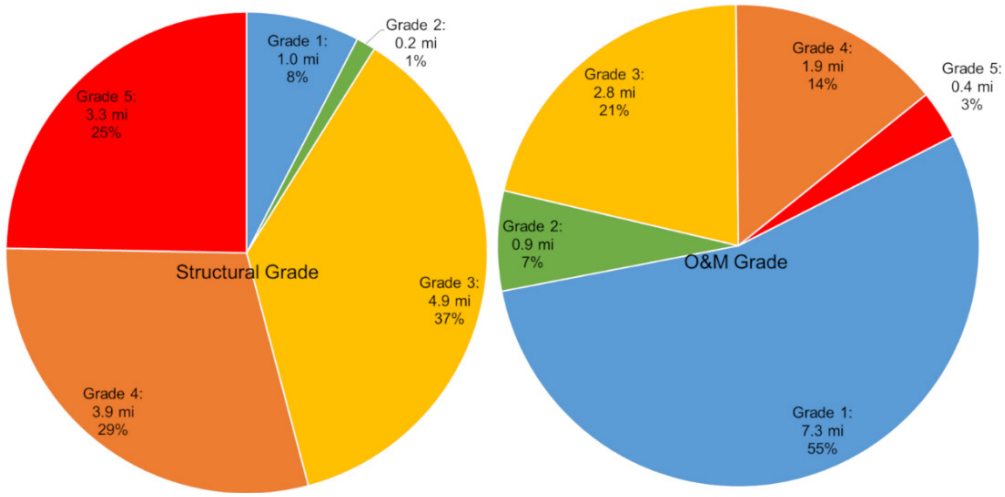

Figure 2.5 Impacted Length by Defect Grade Summary - Gravity Mains

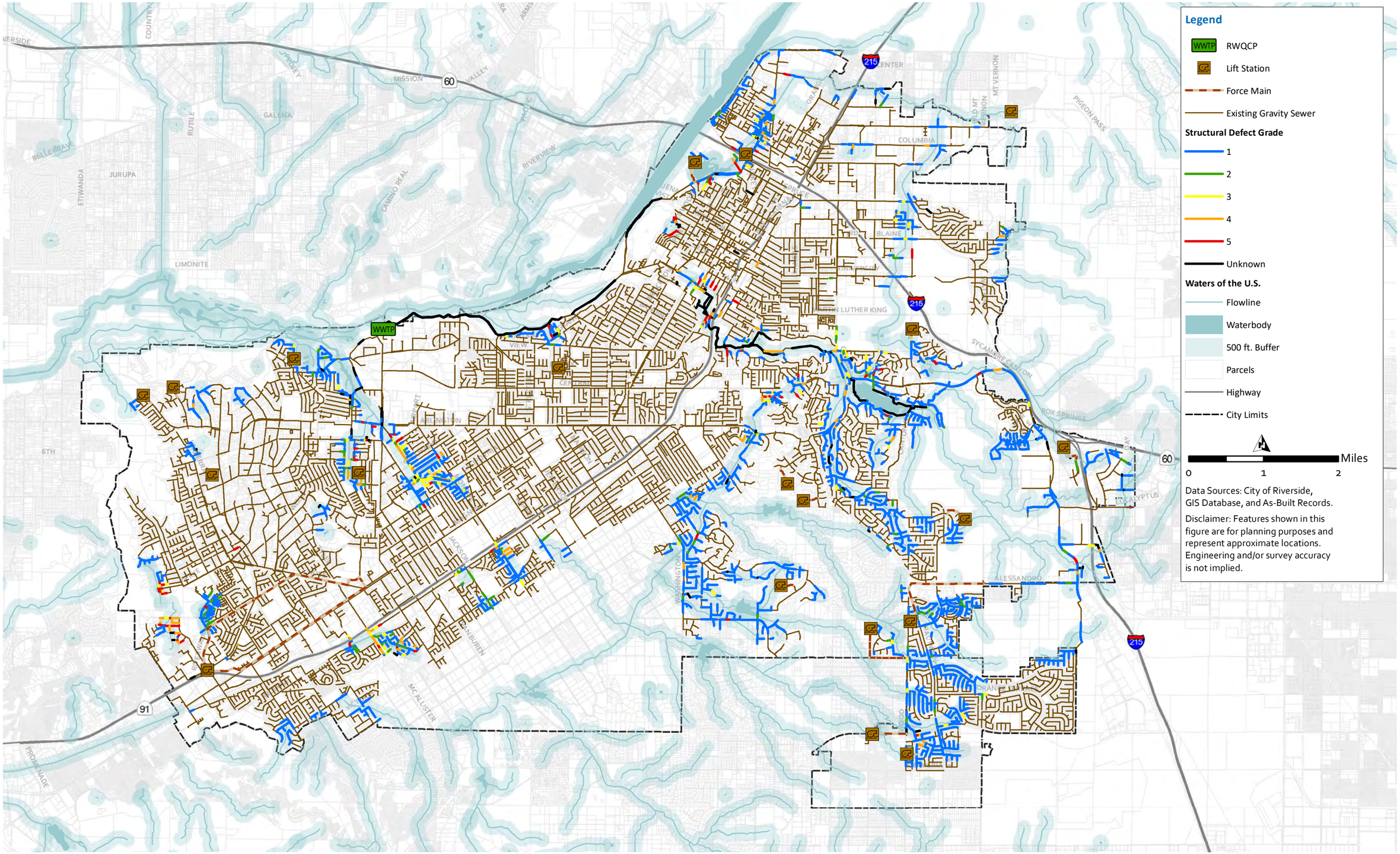

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Figure 2.6 Structural Defect Grade - Gravity Mains

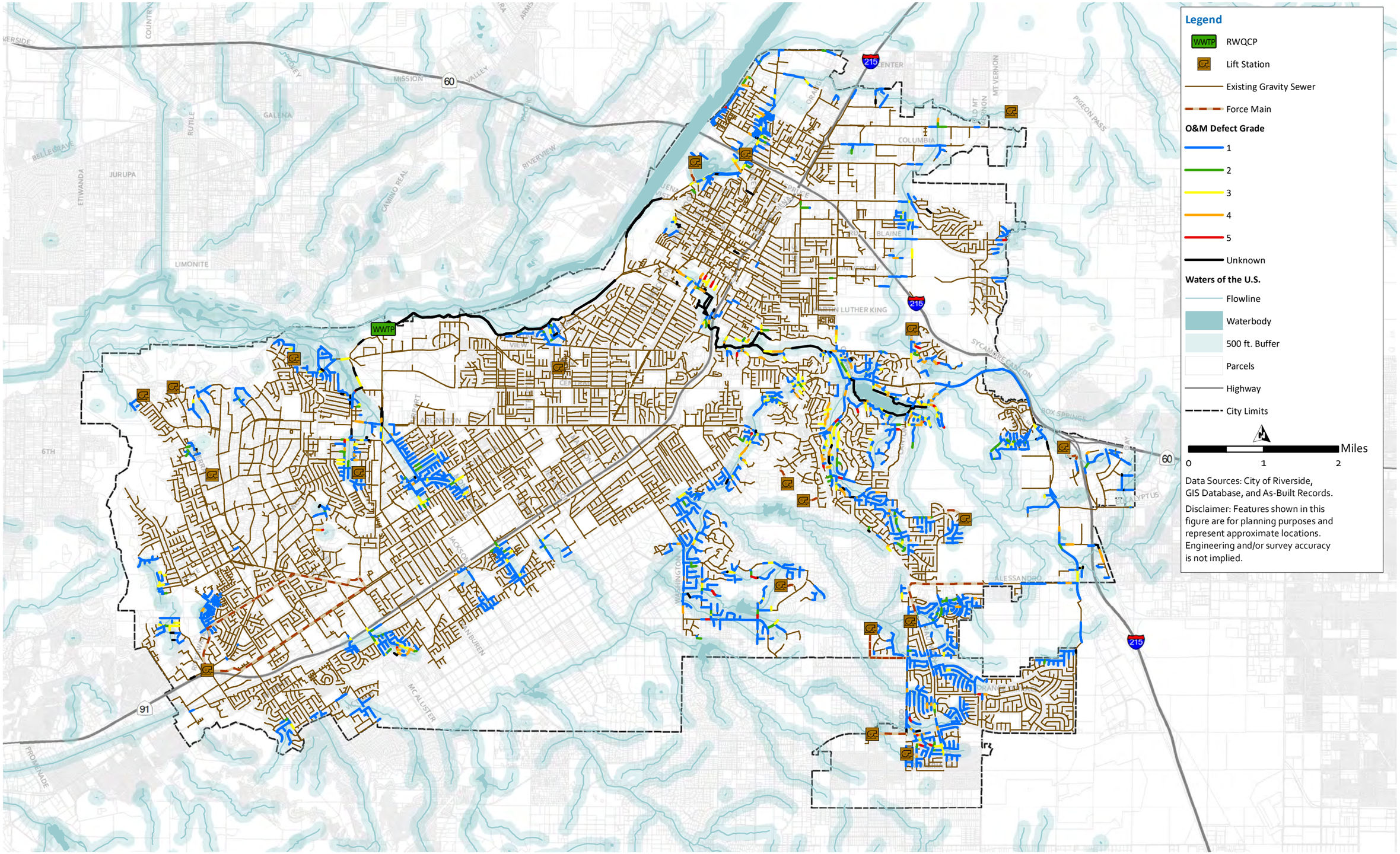

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Figure 2.7 O&M Defect Grade - Gravity Mains

2.3.2 Manhole Evaluation Findings

This section summarizes the manholes evaluation findings. Table 2.2 and Figure 2.8 summarize the number of manholes by defect grade. As indicated, most of the manholes (more than 70-percent) are in good condition and have Grade 1 defects as the highest defect. Figure 2.9 and Figure 2.10 show the locations of the final defect grade assigned to manholes for structural and O&M, respectively. Appendix 2C includes the manhole condition assessment summary and structural and O&M grades.

Table 2.2 Defect Grade Summary - Manhole

Defect Grade	Structural		O&M	
5	11	0.3%	15	0.4%
4	1	0.0%	10	0.3%
3	30	0.9%	43	1.2%
2	9	0.3%	122	3.5%
1	2701	78%	2562	74.1%
Unknown(1)	707	20%	707	20.4%

Notes:
(1) 707 manholes could not be accessed or inspected.

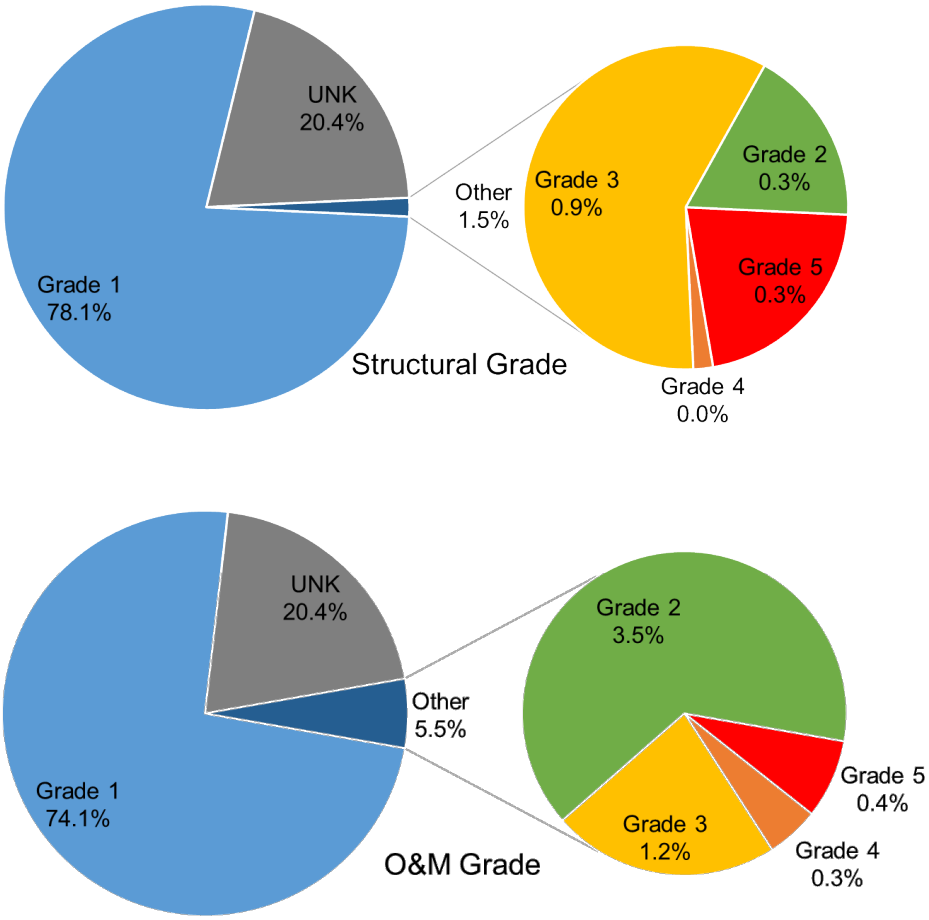

Figure 2.8 Defect Grade Summary - Manhole

2.4 Renewal Program Recommendations

Carollo categorized the evaluation results to help build a Renewal Program for pipelines and manholes within 500 feet of Waters of the United States. The Renewal Program phasing is based upon the requirements of the Agreement, and is intended to act as an estimate of potential rehabilitation and replacement projects, as well a tool to estimate the budgetary obligation of the program costs. It is recommended that the City review the CCTV inspections and use results to determine the most appropriate renewal project for each asset, (i.e., rehabilitate or replace).

2.4.1 Recommended Projects

This section summarizes the method used to make project recommendations for gravity mains and manholes. The following methodology was used to develop gravity main renewal project recommendations:

- Replace: gravity mains were designated for replacement if the maximum defect grade is "3" or greater as part of their structural and/or O&M Quick Rating and satisfies any of the following:
  - Older than 75 years within scheduled phase.
  - Identified as having sags, heavy roots, collapsed, or deformed.
  - Has multiple defects, including roots, and corrosion with a diameter less than 10-inches in diameter.
  - Resulted in an SSO.
  - City's discretion.
- Replace & Upsize: gravity mains smaller than 8 inches in diameter were designated for replacement with a larger pipe if the maximum defect grade is "3" or greater as part of their structural and/or O&M Quick Rating.
- Line: gravity mains with a diameter greater than 8 inches were designated for lining if the maximum defect grade is "3" or greater as part of their structural and/or O&M Quick Rating with multiple defects, including roots and corrosion.
- Spot Repair(s): gravity mains were designated for spot repair(s) with a maximum defect grade "3" or greater as part of their structural and/or O&M Quick Rating and showed a minimum number of defects.

For cases when there are multiple reports for a single asset, the more expensive project was used. Table 2.3 summarizes the recommended gravity main renewal projects. Figure 2.11 shows the recommended gravity main renewal projects and locations. Table 2.3 indicates that the replacement of gravity mains is the most common recommendation because gravity mains smaller than 8 inches in diameter cannot be lined without reducing capacity. Appendix 2D includes the recommended renewal projects and phasing for each gravity main segment.

Table 2.3 Gravity Main Renewal Projects by Category and Phase Summary

Project Category	Phase I (miles)	Phase II (miles)	Total (miles)
Replace (miles)	5.64	4.90	**10.54**
Replace & Upsize (miles)	1.19	0.19	**1.38**
Lining (miles)	1.10	0.30	**1.40**
Spot Repairs (miles)(1)	0.28	0.06	**0.34**
Total	**8.21**	**5.44**	**13.65**

Notes:
(1) Each occurrence of a defect requiring a spot repair is assumed to be 10 feet in length. The actual length will vary on a case-by-case basis.

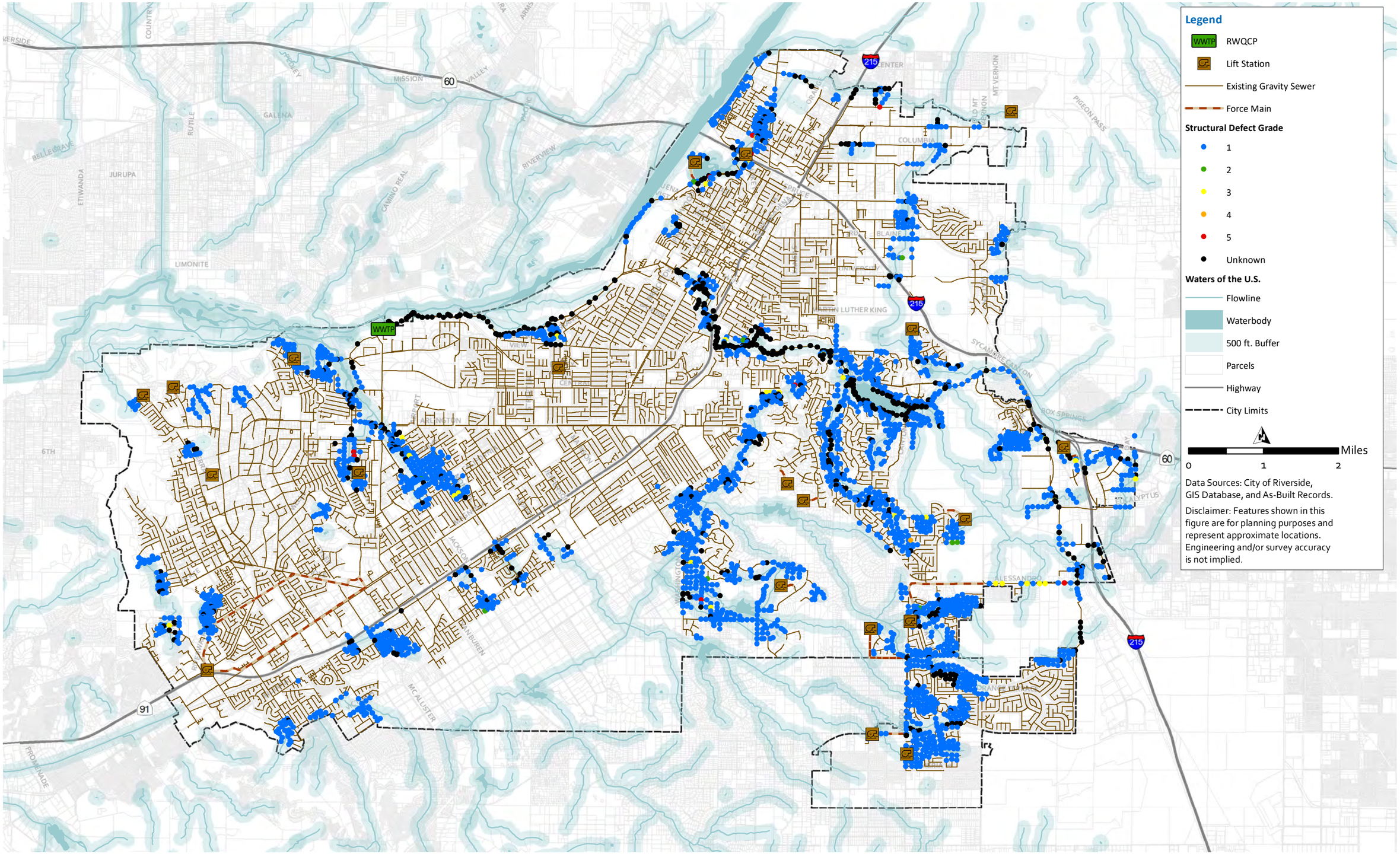

Figure 2.9 Structural Defect Grade - Manhole

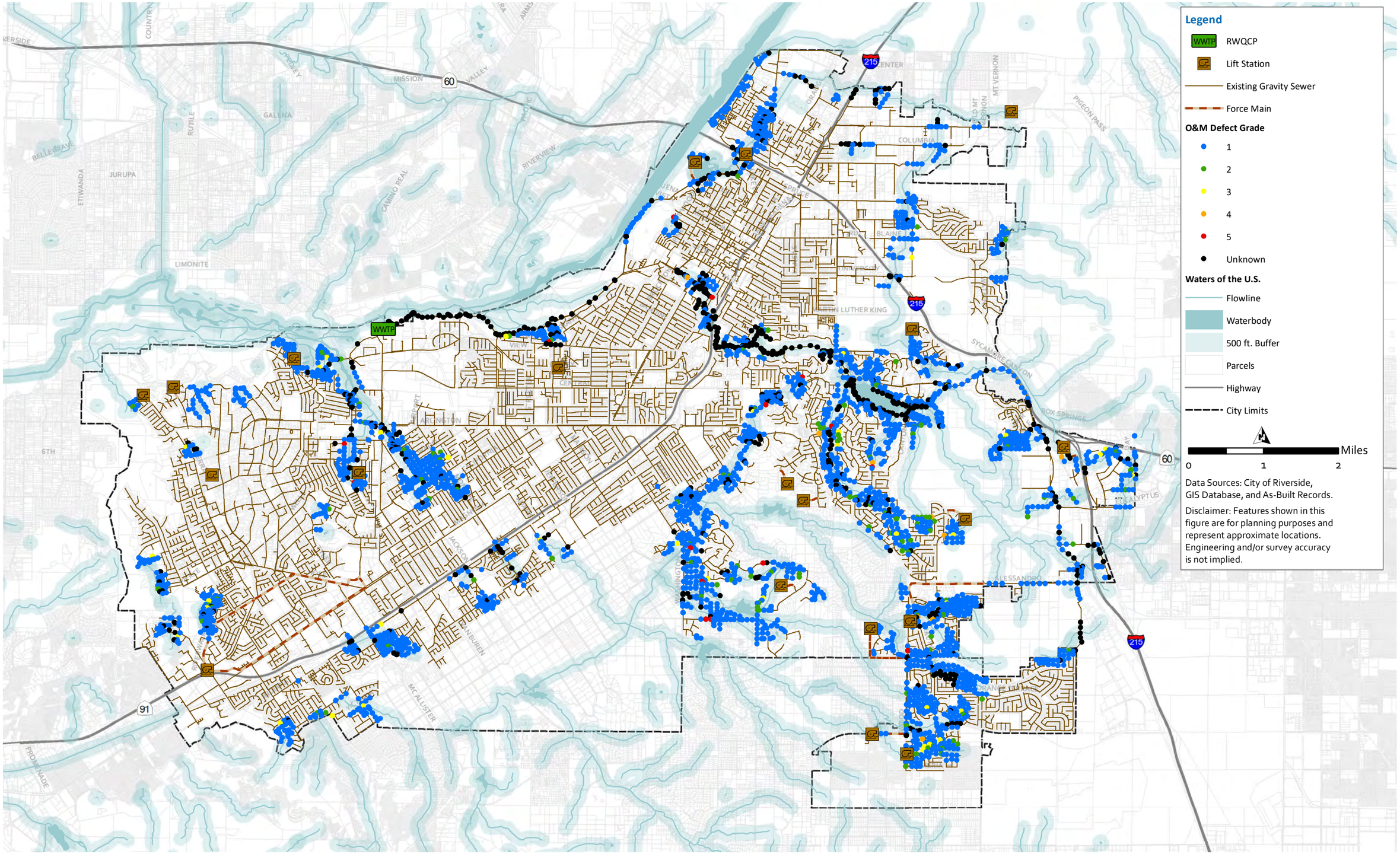

Figure 2.10 O&M Defect Grade - Manhole

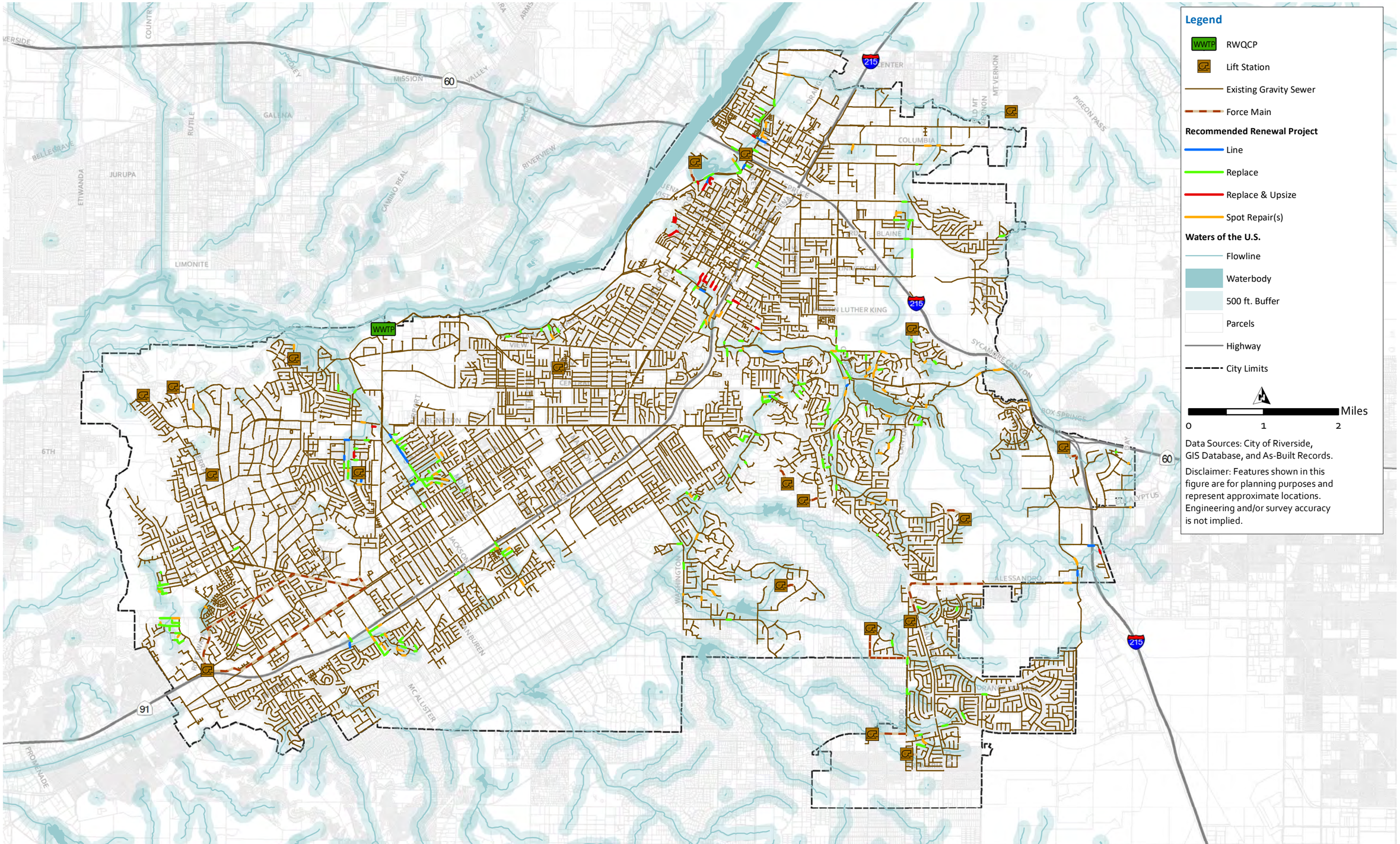

Figure 2.11 Recommended Renewal Projects - Gravity Mains

The following methodology was used to recommend manhole projects:

- Line: manholes were designated for lining if the manhole had a maximum defect grade "3" or greater as part of its structural and/or O&M Quick Rating and identified as having a multitude of structural defects, infiltration, or corrosion.
- Repair: manholes were designated for spot repairs if the manhole had a maximum defect score of "3" or greater as part of its structural and/or O&M Quick Rating with a minimal amount of structural defects.
- Coat: manholes were designated for coating if the manhole had a maximum defect grade of "3" or greater as part of its structural and/or O&M Quick Rating and identified as having corrosion a with minimal amount of structural defects.

For cases when there are multiple reports for a single asset, the more expensive project was used. Table 2.4 summarizes the recommended manhole renewal projects by category and phase. According to Table 2.4, 48 manholes were flagged for rehabilitation and most projects were classified as repairs. Figure 2.12 shows the locations of the recommended manhole renewal projects. Appendix 2E includes the recommended renewal projects and phasing for manholes.

Table 2.4 Manhole Renewal Project by Category and Phase Summary

Project Category	Phase I	Phase II	**Total**
Line	8	16	**24**
Repair	4	16	**20**
Coat	4	0	**4**
Total	**16**	**32**	**48**

2.4.2 O&M Recommendations

This section summarizes the method used to categorize O&M recommendations. The O&M recommendations were flagged as hotspots and require higher frequency of maintenance and/or inspections to address the problems.

- Root Control: gravity mains and manholes designated for root control have a maximum O&M defect grade of "3" or greater together with root intrusion, unless the gravity main is recommended to be replaced during Phase I of the Renewal Program.
- High Frequency Cleaning: gravity mains and manholes designated for high frequency cleaning have a maximum O&M defect grade of "3" or greater together with debris in the sewer.
- FOG Control: gravity mains and manholes designated for the FOG program have a maximum O&M defect grade of "3" or greater together with grease.
- Inspection: gravity mains and manholes designated for frequent inspection have a maximum O&M defect grade of "3" or greater, but the cause of the defect is currently unknown. For example, if the camera was under water at the time of inspection and the asset could not be fully assessed, the asset was assigned an O&M grade of "3" because the cause of the high water level and condition of the asset are unknown. Once the cause of the high-water level and the condition of the asset are known, the City may adjust the inspection frequency as needed. Gravity mains were also flagged for inspection in cases when crews were unable to inspect the gravity main.

Table 2.5 summarizes the recommended O&M activities by category for gravity mains (in length) and manholes (by quantity). Figure 2.13 and Figure 2.14 show the location of the recommended O&M for gravity mains and manholes, respectively. As shown in Table 2.5, inspection makes up the greatest O&M recommendation for gravity mains and manholes. Appendix 2D and Appendix 2E include the O&M recommendations for gravity mains and manholes, respectively.

Table 2.5 Recommend O&M Summary by Category

Project Category	Gravity Main Length (miles)	Manholes (count)
Root Control	8.7	6
FOG Control	2.7	3
High Frequency Cleaning	7.0	55
Inspections	19.0	707

2.5 Capital Improvement Project Phasing

This section discusses the methods used to develop project phasing. The renewal program's phasing is based on the Agreement Sections 2.1.d.i and 2.1.d.ii:

- Repair or replace all sewer lines and/or manholes found to be significantly defective with a maximum defect grade of "4" or "5" based on the PACP rating system.
- Repair or replace all sewer pipe segments containing defects with a maximum defect grade of "3" based on the PACP rating system within the 10 year condition assessment cycle if such defect resulted in a SSO, or, if in the City's discretion, such defects are in close proximity to significantly defective (maximum defect grade of "4" or "5") segments that are in the process of being repaired or replace.

For planning purposes, the capital projects were split into two phases:

- Phase I projects will be completed in the period 2020-2027 and consist of pipelines or manholes with a maximum defect grade of "4" or "5" together with a recommended renewal project.
- Phase II projects will be completed in the period 2028-2037 and consist of the pipelines or manholes with a maximum defect grade of "3" or lower together with a recommended renewal project.

The recommended Renewal Project phasing for gravity sewers and manholes were summarized earlier in Table 2.3 and Table 2.4, respectively. As shown in Table 2.3, approximately 8.2 miles of gravity sewers will undergo renewal projects in Phase I and approximately 5.4 miles of gravity sewer renewal projects will occur during Phase II. According to Table 2.4, 12 manholes will undergo renewal projects in Phase I and 30 manhole renewal projects will occur in the Phase II. Figure 2.15 and Figure 2.16 show the location of the recommended renewal projects by phase for gravity mains and manholes, receptively. Appendix 2D and Appendix 2E includes the project phasing for gravity main and manhole renewal projects. O&M recommendations should be implemented during Phase I and adjusted on a case-by-case basis.

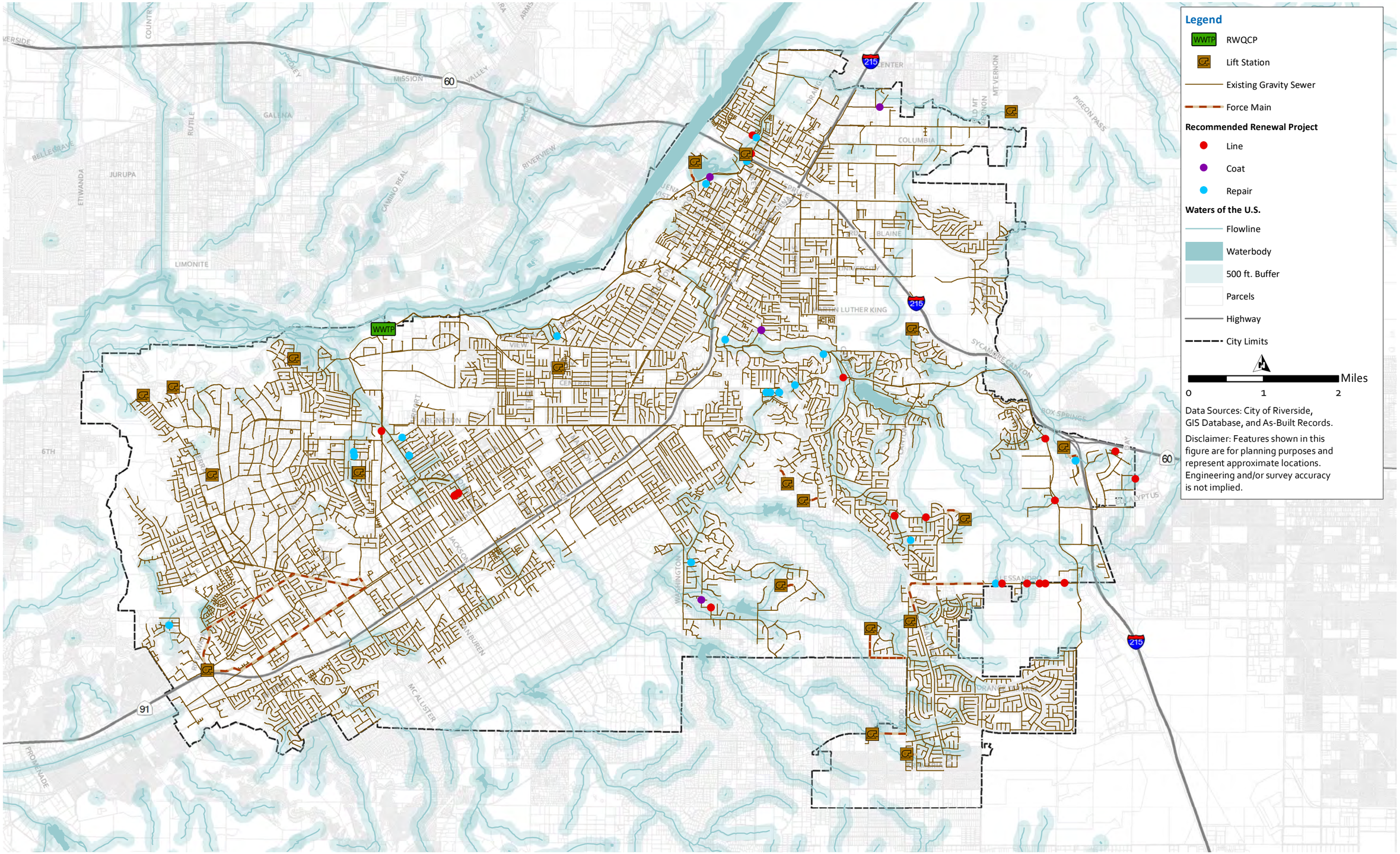

Figure 2.12 Recommended Renewal Projects - Manholes

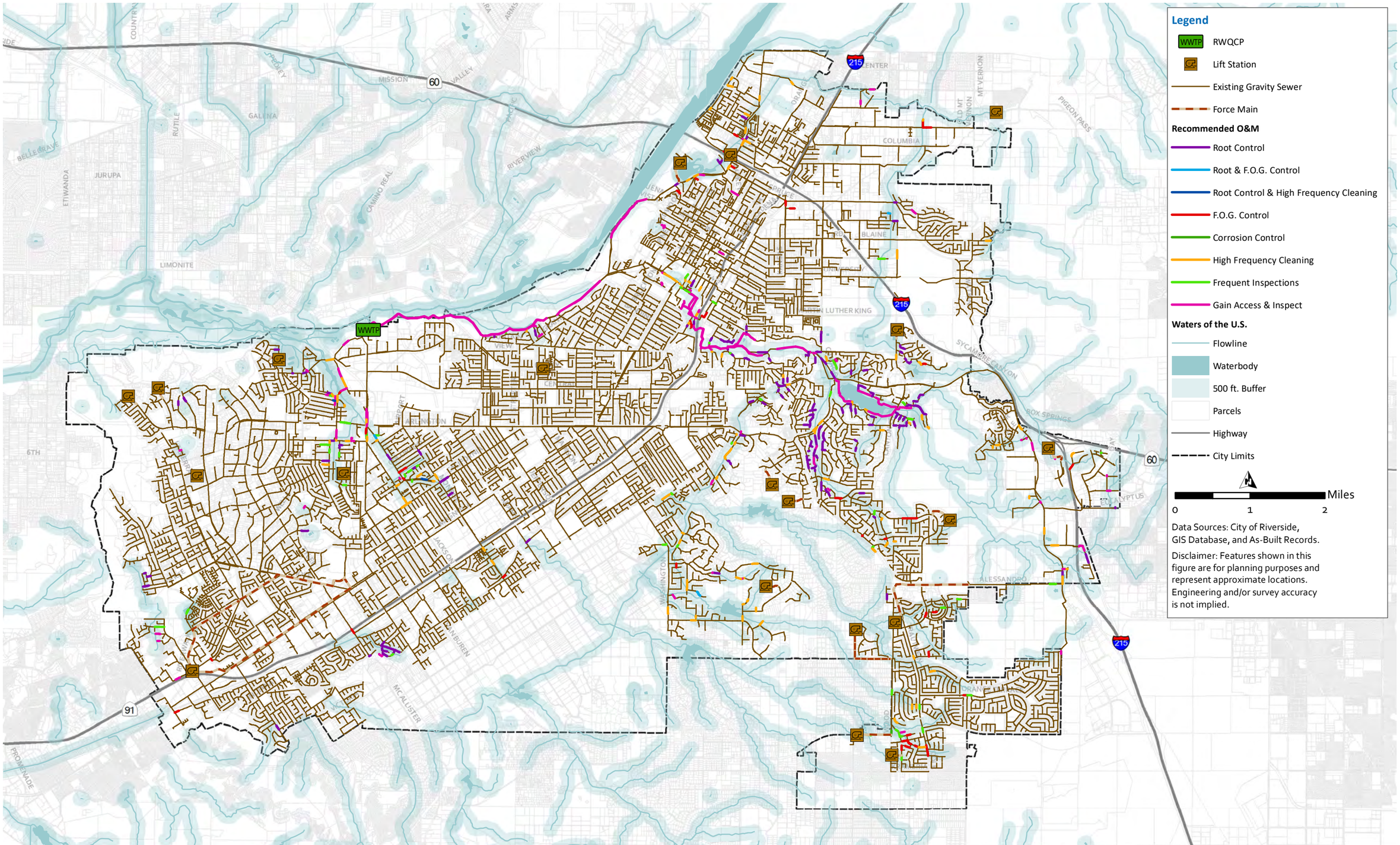

Figure 2.13 Recommended O&M - Gravity Mains

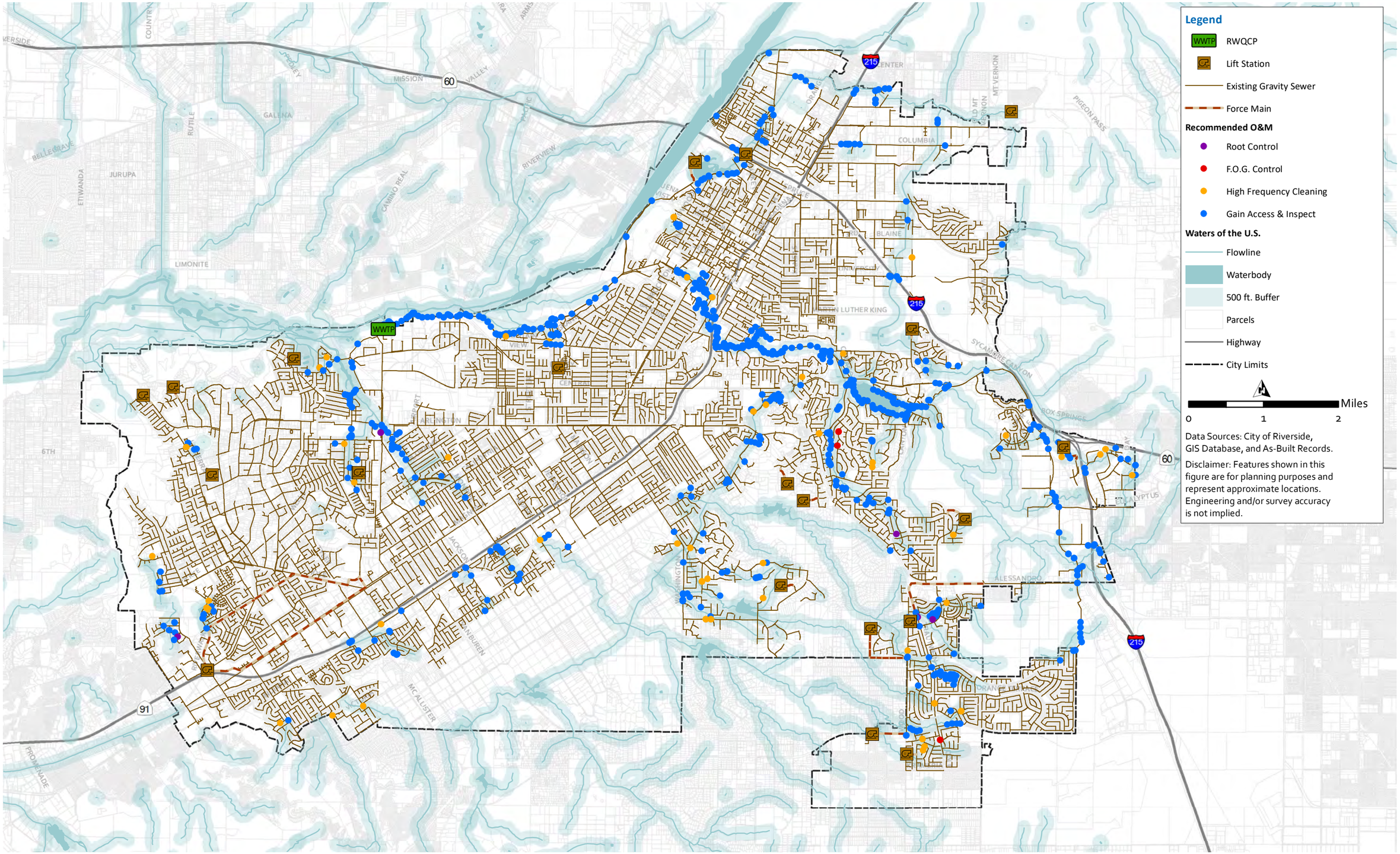

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Figure 2.14 Recommended O&M - Manhole

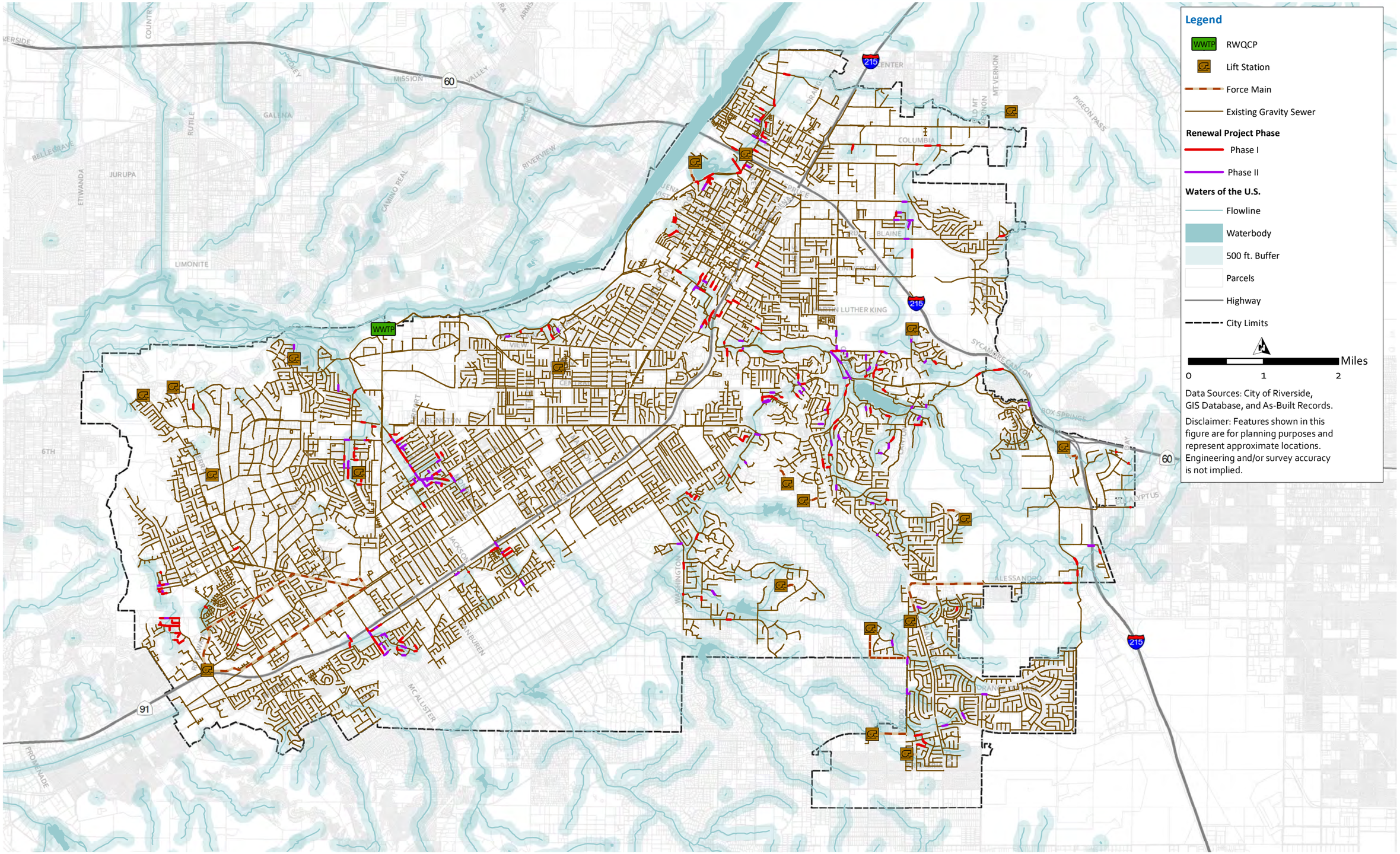

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Figure 2.15 Gravity Main Renewal Project Phase

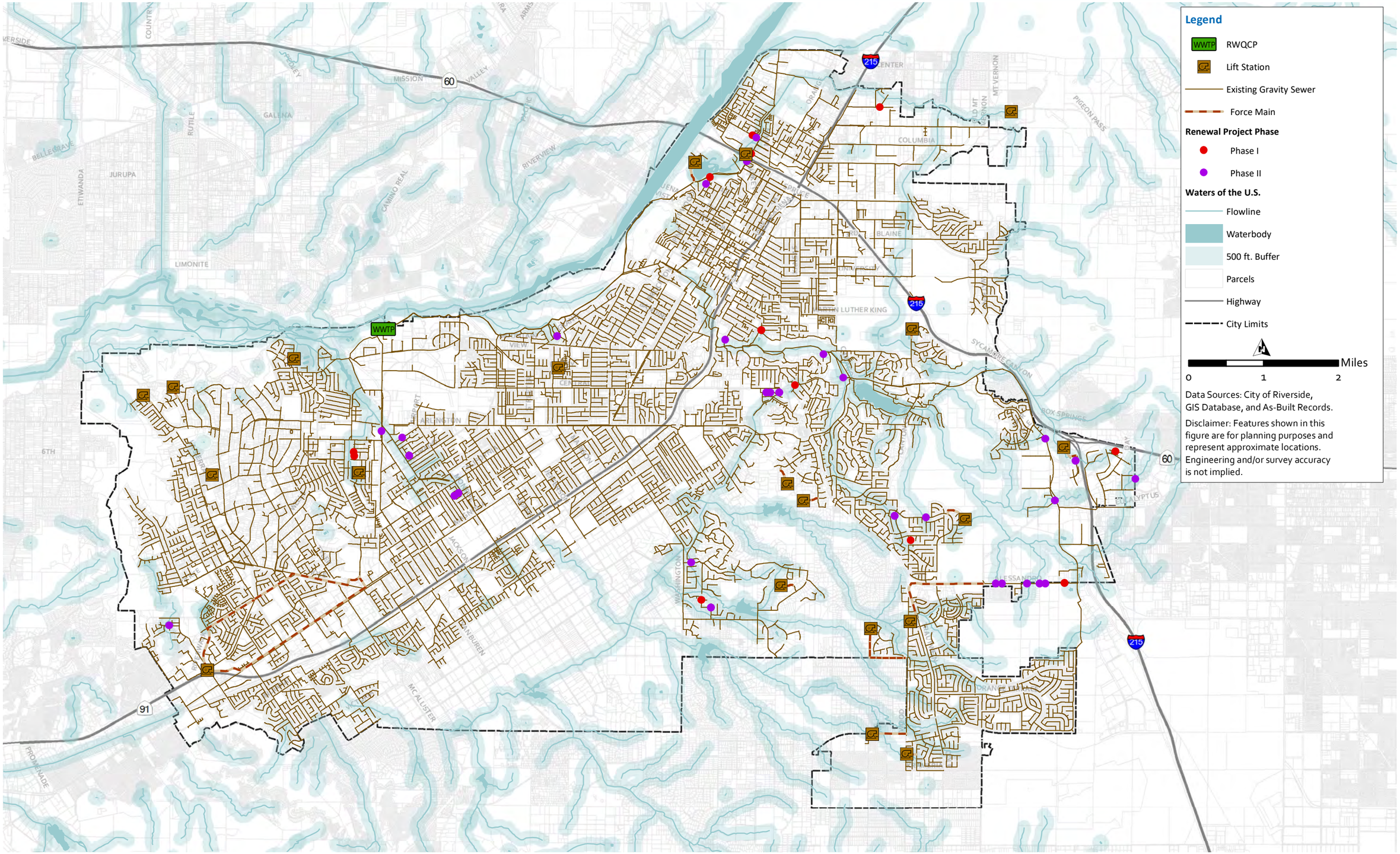

Figure 2.16 Manhole Renewal Project Phase

2.6 Capital Improvement Program

This section summarizes the Renewal Program Costs by project type and phase. It also includes a summary of the assumptions used to develop the program cost. Finally, this section discusses how the Renewal Program's annual budget was split over the 20-year planning period.

2.6.1 Cost Estimating Assumptions

The cost estimates presented in this renewal program are opinions developed from bid tabulations, cost curves, information obtained from previous studies, and experience gained by Carollo on other projects. The costs are based on an ENR CCI for Los Angeles of 11,555 (February 2017). The construction costs are representative of system facilities under normal construction conditions and schedules. A summary of the markup factor applied to the project baseline construction costs, for each category in the cost estimates, is presented as an example in Table 2.6.

Table 2.6 Example: Summary of Markup Factor Applied to Project Baseline Construction Costs

Item	Cost
Baseline Construction Cost	$1,000,000
Estimating Contingency (30%)	$300,000
Subtotal	*$1,300,000*
General Conditions (10%)	$130,000
Subtotal	*$1,430,000*
General Contractor Overhead and Profit (15%)	$215,000
Subtotal	*$1,645,000*
Sales Tax (8.75%) on Materials Only (50% of subtotal)	$72,000
Estimated Construction Cost	**$1,717,000**
Engineering, Management, Legal, etc. (30%)	$515,000
PROJECT COST	**$2,232,000**

In order to avoid duplication of costs, renewal project costs were not included if the cost was already attributed to existing City CIP costs. For instance, small diameter gravity main upsize projects, capacity related projects, and rehabilitation projects are already included in the City's existing CIP as an annual budget item.

2.6.2 Unit Baseline Construction Cost

The unit baseline construction costs are representative of sewer system facilities under normal construction conditions and schedules. These costs are consistent with typical planning level cost estimates; pipeline materials are not specified at this time. The following baseline unit construction costs are presented in the following:

- Gravity Main Replacement Costs (see Table 2.7).
- Gravity Main Renewal Costs (see Table 2.8).
- Manhole Renewal Costs (see Table 2.9).

Table 2.7 Baseline Unit Replacement Costs - Gravity Main

Pipe Diameter (in)	Unit Cost(1) ($/LF)	Pipe Diameter (in)	Unit Cost(1) ($/LF)
8	$170	24	$300
10	$175	27	$340
12	$185	30	$375
15	$200	36	$470
18	$215	42	$550
21	$275	48	$600

Notes:
(1) ENR CCI 11,555 (Los Angeles, February 2017).

Table 2.8 Baseline Unit Renewal Costs - Gravity Main

Project Category	Unit	Unit Cost(1) ($/Unit)
Spot Repair	Each	$5,000
10-inch Line	LF	$75
12-inch Line	LF	$80
15-inch Line	LF	$85
18-inch Line	LF	$95
21-inch Line	LF	$145
24-inch Line	LF	$165
27-inch Line	LF	$170
30-inch Line	LF	$200
36-inch Line	LF	$230

Notes:
(1) ENR CCI 11,555 (Los Angeles, February 2017).

Table 2.9 Baseline Unit Renewal Costs - Manhole

Project Category	Unit	Unit Cost(1) ($/Unit)
Coat - Base	Each	$4,400
Line Manhole	VF	$1,500
Repair - Bench	Each	$2,400
Repair - Channel	Each	$3,800
Repair - Chimney	Each	$5,000
Repair Bench & Channel	Each	$4,200

Notes:
(1) ENR CCI 11,555 (Los Angeles, February 2017).
(2) Assumed manhole depth of 8 feet if manhole depth is unknown.

2.6.3 Renewal Program Costs

Table 2.10 summarizes the Renewal Program cost by project type and phase. As summarized in Table 2.10, the cost of Phase I renewal projects is approximately $13.1 million, which includes $12.8 million for gravity mains and $0.4 million for manholes. The Phase I gravity main renewal costs equate to approximately 97 percent of the Phase I Renewal Program costs. As summarized in

Table 2.10, the cost of Phase II renewal projects is approximately $10.5 million, which includes $9.9 million for gravity mains and $0.6 million for manholes. The Phase II gravity main renewal costs equate to approximately 94 percent of the Phase II Renewal Program costs. In addition, as shown in Figure 2.17, the majority of the proposed Renewal Program costs consist of gravity main replacement, which equates to $22.7 million or 96 percent of the Renewal Program costs. Appendix 2D and Appendix 2E include the total renewal project cost for gravity mains and manholes, respectively.

Table 2.10 CIP Cost Estimate by Project Type and Phase

Project Type	CIP Cost Estimate by Phase ($, Millions)		Total ($, Millions)
	Phase I (2020-2027)	Phase II (2028-2037)	
Gravity Main	**$12.78**	**$9.87**	**$22.65**
Replace	$10.61	$9.36	$19.97
Line	$0.64	$0.16	$0.79
Spot Repair(s)	$1.53	$0.35	$1.89
Manhole	**$0.35**	**$0.60**	**$0.96**
Repair	$0.03	$0.11	$0.13
Line	$0.29	$0.49	$0.78
Coat	$0.04	$0.00	$0.04
Total CIP Cost Estimate	***$13.14***	***$10.47***	***$23.61***

Notes:
(1) The notes that follow are general notes that apply to all the values in the table. Numbers may vary slightly due to rounding.
(2) ENR CCI of 11,555 (LA, February 2017).
(3) Estimated Construction Cost includes a 30% contingency, 10% for general conditions, 15% for general contractor, and sales tax (8.75%) applied to 50% of the baseline construction costs cost.
(4) Total project costs include a 30% markup of the estimated construction cost that accounts for engineering, management, and legal fees.
(5) Total Markup Coefficient is 223% of the baseline construction costs.

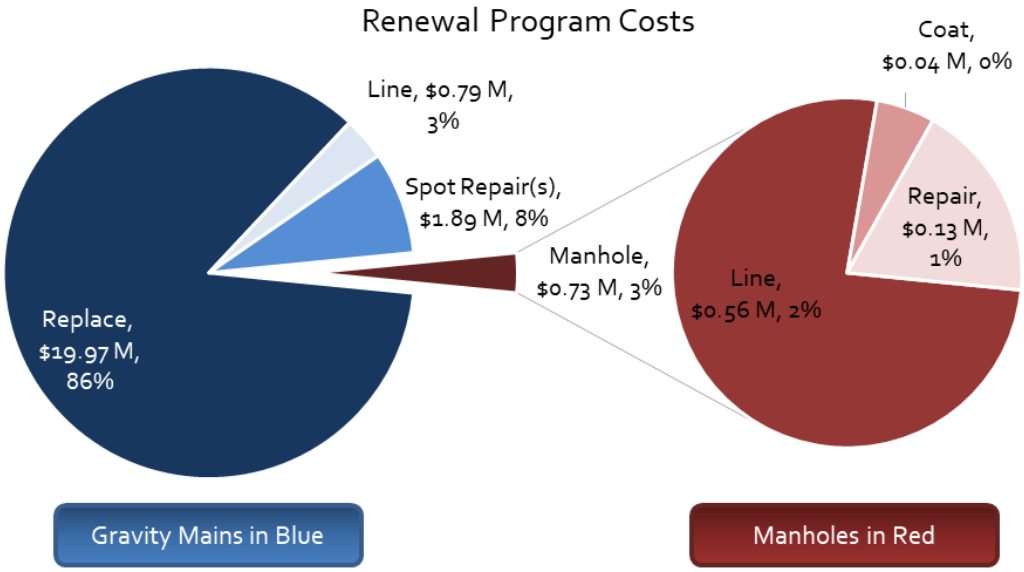

Figure 2.17 Renewal Program Costs

The annual Renewal Program costs are shown on Figure 2.18. The annual Phase I gravity main costs were distributed evenly starting in 2020, which equates to approximately $1.6 million per year for gravity mains. The Phase I manhole portion of the Renewal Program will be delayed and distributed evenly starting in 2025, which equates to approximately $118 thousand per year for manholes. Annual Phase II costs were distributed evenly, which equates too approximately $1 million per year for gravity mains and $60 thousand per year for manholes.

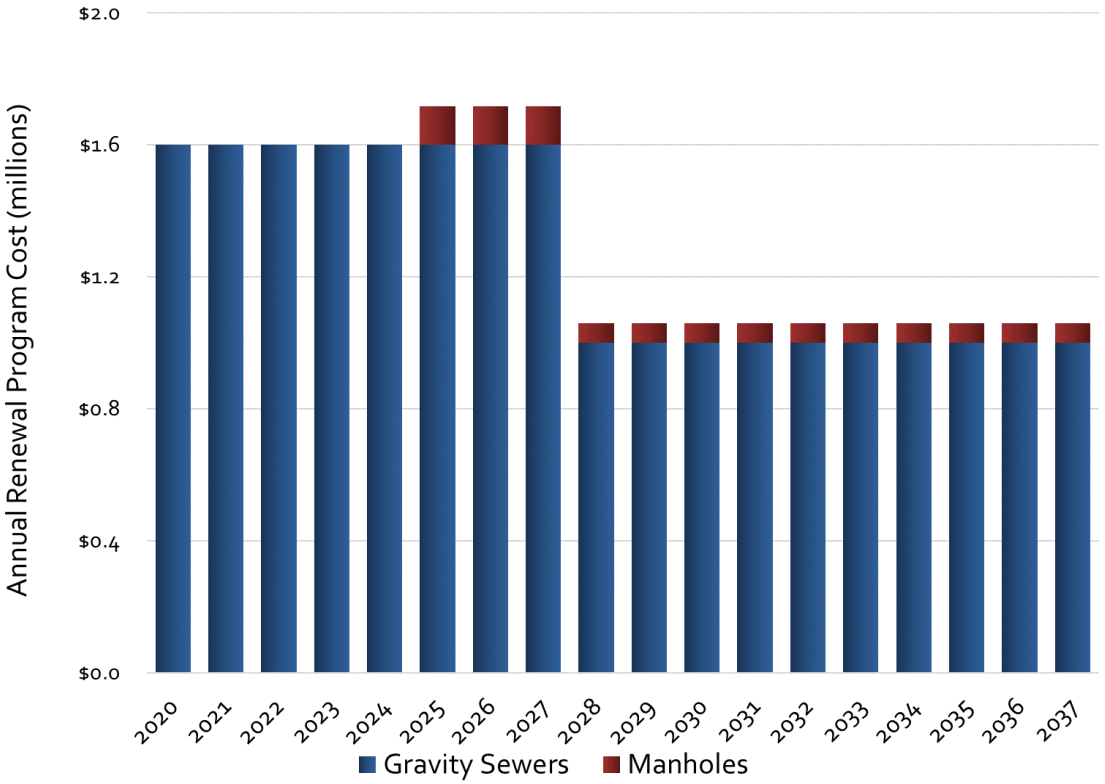

Figure 2.18 Annual Renewal Program Costs

Appendix 2A

EXAMPLE DEFECTS

Figure 1 Structural Defect Grade 5 - Collapse Pipe Sewer

Figure 2 Structural Defect Grade 5 - Deformed > 10%

Figure 3 Structural Defect Grade 5 - Hole Void Visible

Figure 4 Structural Defect Grade 5 - Broken Soil Visible

Figure 5 Structural Defect Grade 4 - Sag, > 50%

Figure 6 Structural Defect Grade 4 - Fractures Longitudinal Hinge 2

Figure 7 Structural Defect Grade 4 - Fractures Multiple

Figure 8 Structural Defect Grade 3- Multiple Cracks

Figure 9 Structural Defect Grade 3 - Broken at 12 o'clock

Figure 10 Structural Defect Grade 3 - Fracture Spiral

Figure 11 Structural Defect Grade 3 - Sag, 35%

Figure 12 Structural Defect Grade 2 - Joint Angular Large

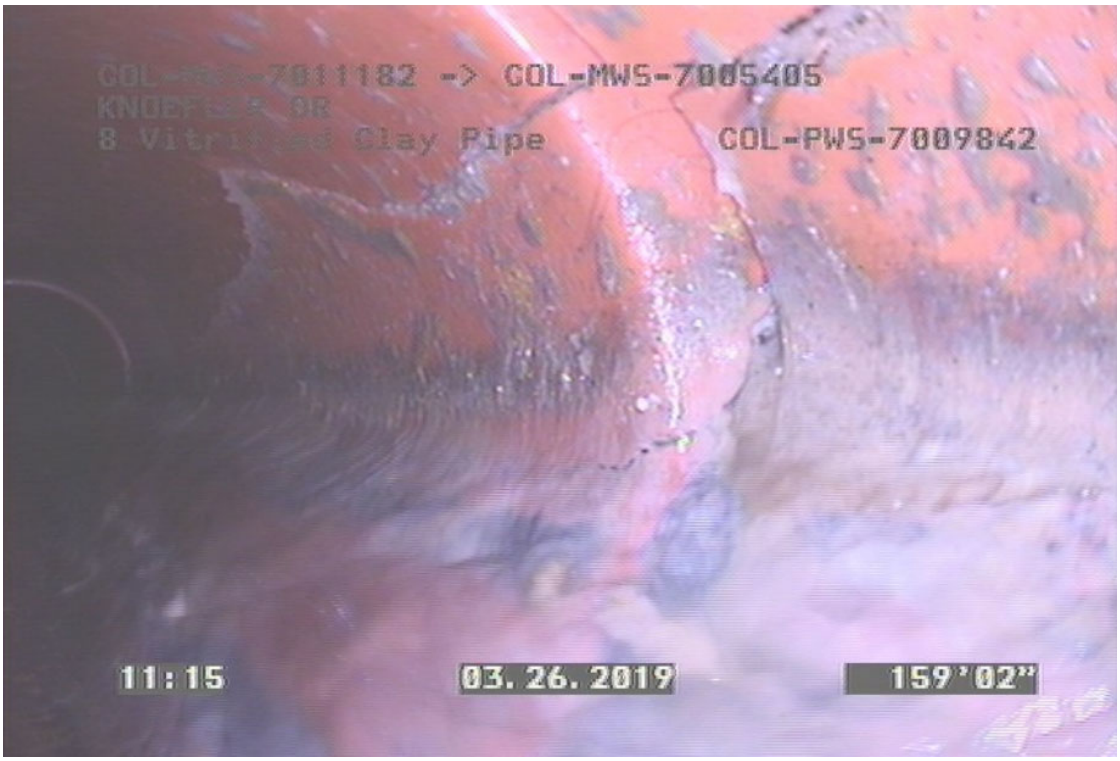

Figure 13 Structural Defect Grade 2 - Joint Offset Large

Figure 14 Structural Defect Grade 2 - Crack Spiral

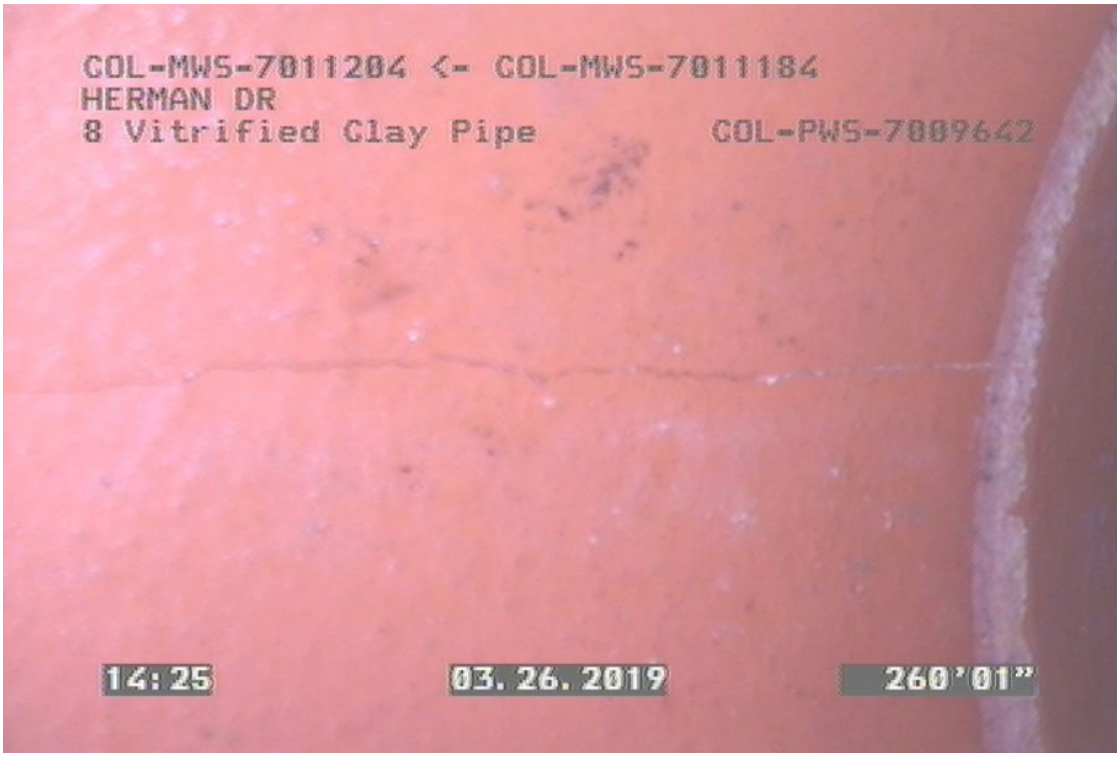

Figure 15 Structural Defect Grade 2 - Crack Longitudinal

Figure 16 Structural Defect Grade 1 - Joint Offset Medium

Figure 17 Structural Defect Grade 1 - Crack Circumferential

Figure 18 O&M Defect Grade 5 - Root Ball Barrel

Figure 19 O&M Defect Grade 5 - Obstacles Construction Debris

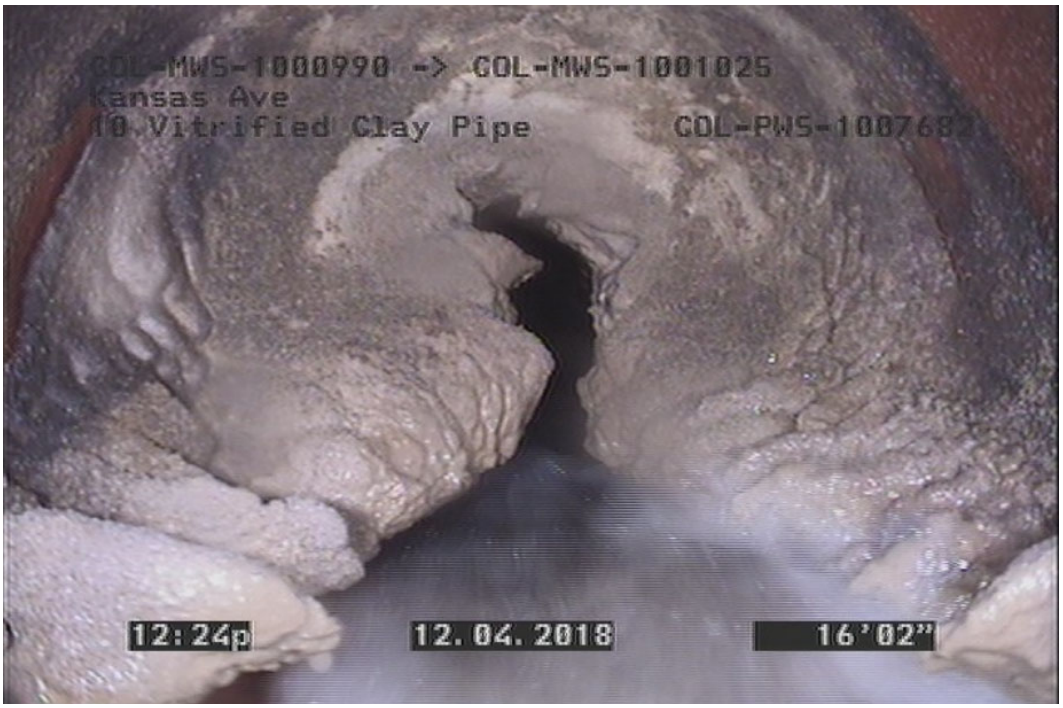

Figure 20 O&M Defect Grade 5 - Deposits Attached Grease

Figure 21 O&M Defect Grade 5 - Infiltration Gusher

Figure 22 O&M Defect Grade 4 - Infiltration Runner

Figure 23 O&M Defect Grade 4 - Deposits Attached Grease, 25%

Figure 24 O&M Defect Grade 3 - Roots Medium Lateral

Figure 25 O&M Defect Grade 3 - Deposits Settled Compacted, 20%

Figure 26 O&M Defect Grade 3 - Infiltration Dripper

Figure 27 O&M Defect Grade 2 - Deposits Encrustation, 5%

Figure 28 O&M Defect Grade 2 - Obstacles in Joint, 5%

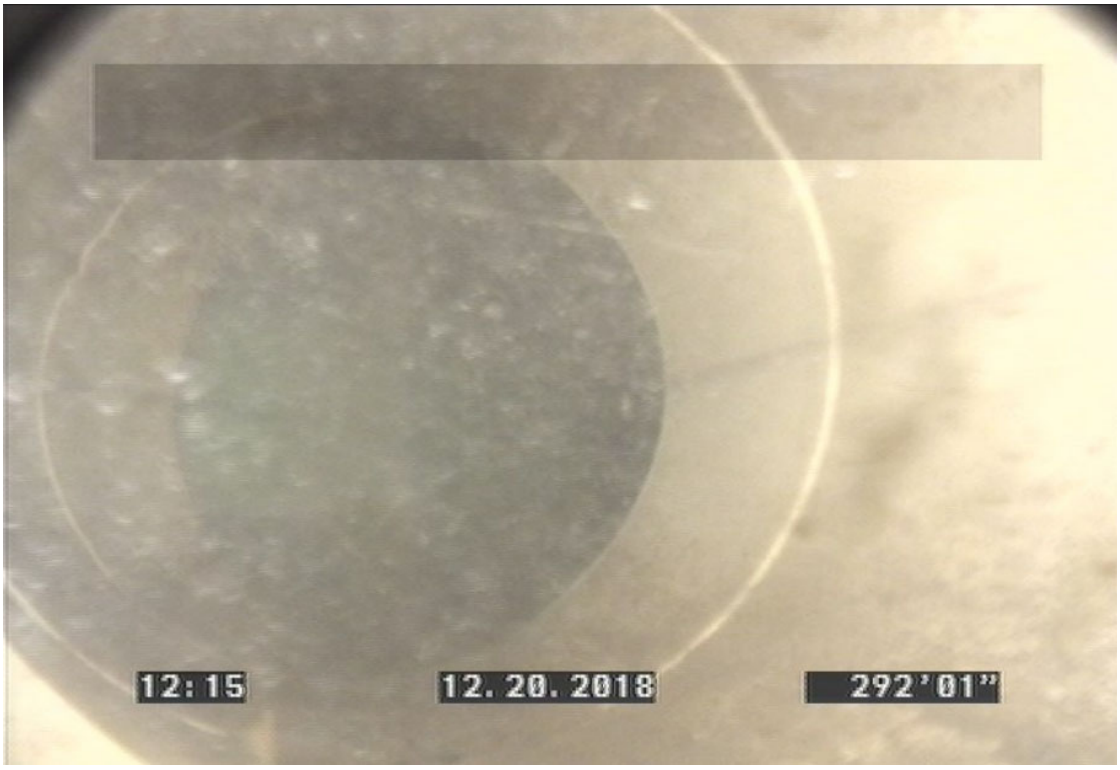

Figure 29 O&M Defect Grade 2 - Tap Factory Made Defective

Figure 30 O&M Defect Grade 2 - Alignment Right, 20%

Figure 31 O&M Defect Grade 1 - Roots Fine Joint

Figure 32 O&M Defect Grade 1 - Vermin

Appendix 2B

GRAVITY MAIN CONDITION ASSESSMENT SUMMARY AND STRUCTURAL AND O&M GRADE

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-1009063	10/11/2018			126.76	8	VCP	0000	0000	1	1	
COL-PWS-1009070	10/11/2018			88.15	8	VCP	0000	2111	1	2	Obstacles in pipe (Broken Pipe)
COL-PWS-1009071	10/11/2018			171.12	8	VCP	0000	0000	1	1	
COL-PWS-1009072	10/11/2018			181.85	8	VCP	0000	0000	1	1	
COL-PWS-1009073	10/11/2018			281.40	8	VCP	0000	0000	1	1	
COL-PWS-1009074	10/11/2018			263.07	8	VCP	0000	0000	1	1	
COL-PWS-1009075	10/11/2018			324.89	8	VCP	0000	0000	1	1	
COL-PWS-1009041	10/12/2018			79.18	8	VCP	0000	2300	1	2	Settled deposits in line. (Fine and Gravel). Inspection Abandoned.
COL-PWS-1008895	10/12/2018			226.22	8	RPM	0000	0000	1	1	
COL-PWS-1008925	10/12/2018			345.66	8	RPM	0000	0000	1	1	
COL-PWS-1008949	10/12/2018			348.20	8	RPM	0000	0000	1	1	
COL-PWS-1008975	10/12/2018			347.42	8	RPM	0000	0000	1	1	
COL-PWS-1008983	10/12/2018			121.98	8	RPM	0000	0000	1	1	
COL-PWS-1008985	10/12/2018			263.66	8	VCP	0000	0000	1	1	
COL-PWS-1008994	10/12/2018			148.31	8	VCP	1100	0000	1	1	Joint Offset
COL-PWS-1009006	10/12/2018			328.89	8	VCP	0000	0000	1	1	
COL-PWS-1009014	10/12/2018			214.51	8	VCP	0000	0000	1	1	
COL-PWS-1009036	10/12/2018			61.04	8	VCP	0000	3100	1	3	Obstacles in pipe (Plug, Rock)
COL-PWS-1008877	10/19/2018			143.60	8	VCP	0000	5100	1	5	Possible Construction Debris. Plastic in the line, blocking 100% of the flow. Marked as Failing because flow is 100% blocked but might be an easy fix.
COL-PWS-1009010	10/19/2018			123.03	8	VCP	0000	0000	1	1	
COL-PWS-1008487	10/19/2018			300.32	8	VCP	0000	0000	1	1	
COL-PWS-1008984	10/19/2018			224.49	8	VCP	0000	0000	1	1	
COL-PWS-1008991	10/19/2018			212.57	8	VCP	0000	0000	1	1	
COL-PWS-1008993	10/19/2018			241.09	8	VCP	0000	0000	1	1	
COL-PWS-1009002	10/19/2018			168.64	8	VCP	0000	0000	1	1	
COL-PWS-1009012	10/19/2018			95.90	8	VCP	0000	0000	1	1	
COL-PWS-1018977	10/19/2018			278.85	8	VCP	0000	0000	1	1	
COL-PWS-1008778	10/22/2018			353.98	8	VCP	3400	0000	3	1	Sag in Pipe.
COL-PWS-1008883	10/22/2018			171.33	8	VCP	4100	0000	4	1	Sag in Pipe
COL-PWS-1008795	10/22/2018			125.31	8	VCP	4500	0000	4	1	Multiple Sags in line.
COL-PWS-1008827	10/22/2018			288.39	8	VCP	4A33	4100	4	4	Multiple Sags in line. Multiple Fractures.
COL-PWS-1008533	10/22/2018			269.51	8	VCP	4223	0000	4	1	Multiple Spiral Cracks and Fractures.
COL-PWS-1008847	10/22/2018			354.58	8	VCP	0000	4421	1	4	Obstacle in Joint (Knife). Camera Underwater.
COL-PWS-1008820	10/22/2018			352.09	8	VCP	0000	3111	1	3	Roots at Joint. Medium Roots at Lateral.
COL-PWS-1008562	10/22/2018			143.30	8	VCP	0000	0000	1	1	
COL-PWS-1008581	10/22/2018			124.42	8	VCP	0000	0000	1	1	
COL-PWS-1008662	10/22/2018			178.98	10	VCP	0000	0000	1	1	
COL-PWS-1008719	10/22/2018			355.77	8	VCP	0000	0000	1	1	
COL-PWS-1008746	10/22/2018			154.33	8	VCP	0000	0000	1	1	
COL-PWS-1008775	10/22/2018			164.27	8	VCP	0000	0000	1	1	
COL-PWS-1008853	10/22/2018			285.01	8	VCP	0000	0000	1	1	
COL-PWS-1008869	10/22/2018			276.86	8	VCP	0000	0000	1	1	
COL-PWS-1008510	10/22/2018			301.11	8	VCP	2100	0000	2	1	Spiral Crack in the line.
COL-PWS-1008883	10/22/2018			70.06	8	VCP	4100	0000	4	1	Reverse Pull. Sag in Line.
COL-PWS-1008912	10/23/2018			39.06	15	VCP	4100	1100	4	1	Sag in pipe - 100% of pipe. Material underwater. Needs to be recleaned.
COL-PWS-1008731	10/23/2018			215.45	8	VCP	4100	2100	4	1	Multiple fractures in pipe.
0	10/23/2018			79.80	15	VCP	0000	0000	1	1	Undocumented MH --> COL-MWS-1000607.
0	10/23/2018			215.45	15	VCP	0000	0000	1	1	COL-MWS-1000606 --> Undocumented MH.
COL-PWS-1008326	10/23/2018			300.02	8	VCP	0000	0000	1	1	
COL-PWS-1008342	10/23/2018			297.24	8	VCP	0000	0000	1	1	
COL-PWS-1008516	10/23/2018			316.51	8	VCP	0000	0000	1	1	
COL-PWS-1008546	10/23/2018			166.56	8	VCP	0000	0000	1	1	
COL-PWS-1008621	10/23/2018			327.64	8	VCP	0000	0000	1	1	
COL-PWS-1008727	10/23/2018			92.82	8	VCP	0000	0000	1	1	
COL-PWS-1008749	10/23/2018			407.94	15	VCP	0000	0000	1	1	
COL-PWS-1008808	10/23/2018			406.25	15	VCP	0000	1100	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-1008850	10/23/2018			416.59	15	VCP	0000	1100	1	1	Vermin Cockroach.
COL-PWS-1008909	10/23/2018			347.92	15	VCP	0000	0000	1	1	
COL-PWS-1008614	10/23/2018			266.53	15	VCP	0000	3100	1	3	Debris in pipe. Needs to be recleaned.
COL-PWS-1008972	10/23/2018			11.23	15	VCP	0000	3100	1	3	Debris in pipe. Needs to be recleaned.
COL-PWS-1008731	10/23/2018			323.47	8	VCP	0000	2100	1	2	Obstacles in joint - unknown metal object.
COL-PWS-1008331	10/25/2018			376.04	12	VCP	5142	0000	5	1	Fractures in pipe. Sag in pipe - 75% of pipe. Broken soil visible. Joint angular.
COL-PWS-1008465	10/25/2018			292.56	8	VCP	4100	2B00	4	2	Multiple fractures. Deposits attached other - sludge in pipe.
COL-PWS-1017985	10/25/2018			311.65	12	VCP	0000	2K00	1	2	Deposits attached other - sludge in pipe.
COL-PWS-1008493	10/25/2018			284.61	8	VCP	0000	3100	1	3	Medium roots in joint.
COL-PWS-1008549	10/25/2018			230.36	8	PVC	0000	0000	1	1	
COL-PWS-1008317	10/25/2018			294.06	8	VCP	0000	0000	1	1	
COL-PWS-1008332	10/25/2018			261.96	8	VCP	0000	0000	1	1	
COL-PWS-1008337	10/25/2018			245.86	8	VCP	0000	0000	1	1	
COL-PWS-1008373	10/25/2018			76.22	8	VCP	0000	0000	1	1	
COL-PWS-1008400	10/25/2018			264.34	8	VCP	0000	0000	1	1	
COL-PWS-1008428	10/25/2018			351.00	8	VCP	0000	0000	1	1	
COL-PWS-1008497	10/25/2018			72.84	8	VCP	0000	2900	1	2	Deposits attached other - sludge in pipe.
COL-PWS-1008511	10/25/2018			126.61	8	PVC	0000	0000	1	1	
COL-PWS-1008530	10/25/2018			117.17	8	PVC	0000	0000	1	1	
COL-PWS-1008544	10/25/2018			138.03	8	PVC	0000	0000	1	1	
COL-PWS-1008561	10/25/2018			82.18	8	PVC	0000	0000	1	1	
COL-PWS-1008549	10/25/2018			117.96	8	PVC	0000	0000	1	1	
COL-PWS-1009046	10/26/2018			411.62	12	VCP	5100	0000	5	1	Broken Pipe - 04-05 o'clock, 2.98 ft.
COL-PWS-1008716	10/26/2018			245.36	8	VCP	0000	2I00	1	2	Deposits attached other - sludge in pipe.
COL-PWS-1008767	10/26/2018			313.04	8	VCP	0000	4C2L	1	4	Deposits attached other - sludge in pipe. Camera Underwater.
COL-PWS-1008288	10/26/2018			0.00	12	VCP	0000	0000	1	1	Line was not inspected. Area is fenced off, no access.
COL-PWS-1008783	10/26/2018			146.18	8	VCP	0000	4C2E	1	4	Deposits attached other - sludge in pipe. Camera Underwater.
COL-PWS-1009026	10/26/2018			242.68	8	PVC	0000	3100	1	3	Deposits settled compacted - Inside channel at Upstream MH.
COL-PWS-1002092	10/26/2018			314.43	8	PVC	0000	0000	1	1	
COL-PWS-1008918	10/26/2018			304.49	8	VCP	0000	0000	1	1	
COL-PWS-1008946	10/26/2018			210.98	8	PVC	0000	0000	1	1	
COL-PWS-1008958	10/26/2018			262.25	8	VCP	0000	1100	1	1	Vermin Cockroach.
COL-PWS-1008964	10/26/2018			149.26	8	PVC	0000	0000	1	1	
COL-PWS-1008971	10/26/2018			386.87	8	PVC	0000	0000	1	1	
COL-PWS-1009039	10/26/2018			159.80	12	VCP	0000	0000	1	1	
COL-PWS-1009040	10/26/2018			406.55	12	VCP	0000	0000	1	1	
COL-PWS-1009042	10/26/2018			97.39	12	VCP	0000	0000	1	1	
COL-PWS-1009045	10/26/2018			342.15	12	VCP	0000	0000	1	1	
COL-PWS-1008912	10/26/2018			265.53	8	VCP	0000	1100	1	1	Vermin Cockroach.
COL-PWS-1008350	10/29/2018			401.28	10	VCP	4100	0000	4	1	Multiple fractures @ 399 ft.
COL-PWS-1008617	10/29/2018			353.98	10	VCP	0000	2M00	1	2	Deposits attached other - sludge in pipe.
COL-PWS-1008619	10/29/2018			253.61	10	VCP	0000	2I00	1	2	Deposits attached other - sludge in pipe.
COL-PWS-1008228	10/29/2018			288.59	8	VCP	0000	0000	1	1	
COL-PWS-1008261	10/29/2018			318.90	8	VCP	0000	0000	1	1	
COL-PWS-1008298	10/29/2018			227.97	8	VCP	0000	0000	1	1	
COL-PWS-1008306	10/29/2018			308.27	8	VCP	1100	0000	1	1	Offset Joint @ 304.1 ft.
COL-PWS-1008346	10/29/2018			355.37	10	VCP	0000	0000	1	1	
COL-PWS-1008362	10/29/2018			129.09	10	VCP	0000	0000	1	1	
COL-PWS-1008385	10/29/2018			128.10	8	VCP	0000	0000	1	1	
COL-PWS-1008603	10/29/2018			346.53	10	VCP	0000	0000	1	1	
COL-PWS-1008622	10/29/2018			113.89	10	VCP	0000	0000	1	1	
COL-PWS-1008623	10/29/2018			331.52	10	VCP	0000	0000	1	1	
COL-PWS-1008627	10/29/2018			166.56	10	VCP	0000	0000	1	1	
COL-PWS-1008189	10/29/2018			150.26	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-1008189	10/29/2018			170.53	8	VCP	0000	2100	1	2	Deposits settled gravel - gravel in pipe, coming from lateral @ 170.1 ft.
COL-PWS-1008360	10/30/2018			193.09	10	VCP	4100	0000	4	1	Multiple fractures @ 189 ft.
COL-PWS-1008356	10/30/2018			380.02	10	VCP	0000	0000	1	1	
COL-PWS-1008496	10/30/2018			91.82	8	PVC	0000	0000	1	1	
COL-PWS-1008517	10/30/2018			86.46	8	PVC	0000	0000	1	1	
COL-PWS-1008519	10/30/2018			139.03	8	PVC	0000	0000	1	1	
COL-PWS-1008560	10/30/2018			137.64	8	PVC	0000	0000	1	1	
COL-PWS-1008565	10/30/2018			327.64	8	PVC	0000	0000	1	1	
COL-PWS-1008620	10/30/2018			261.06	8	PVC	0000	0000	1	1	
COL-PWS-1008763	10/30/2018			167.15	8	PVC	0000	0000	1	1	
COL-PWS-1008766	10/30/2018			63.90	8	PVC	0000	0000	1	1	
COL-PWS-1008780	10/30/2018			213.66	8	PVC	0000	0000	1	1	
COL-PWS-1008786	10/30/2018			135.65	8	PVC	0000	0000	1	1	
COL-PWS-1008787	10/30/2018			151.75	8	PVC	0000	0000	1	1	
COL-PWS-1008792	10/30/2018			51.68	8	PVC	0000	0000	1	1	
COL-PWS-1008807	10/30/2018			152.34	8	PVC	0000	0000	1	1	
COL-PWS-1008810	10/30/2018			117.46	8	PVC	0000	0000	1	1	
COL-PWS-1008821	10/30/2018			188.72	8	PVC	0000	0000	1	1	
COL-PWS-1008825	10/30/2018			321.38	8	PVC	0000	0000	1	1	
COL-PWS-1008839	10/30/2018			111.00	8	PVC	0000	0000	1	1	
COL-PWS-1008876	10/30/2018			183.25	8	PVC	0000	0000	1	1	
COL-PWS-1008512	10/30/2018			230.55	8	PVC	2200	0000	2	1	Sag in pipe, 30%, @ 218 ft.
COL-PWS-1008111	10/31/2018			372.66	8	VCP	3200	2100	3	2	Deposits attached grease @ 211 ft. Multiple cracks at 218 ft. and 248 ft.
COL-PWS-1008290	10/31/2018			304.09	8	VCP	5141	1200	5	1	Fine roots at joint, @ 185 & 188 ft. Multiple fractures at 299 ft. Broken pipe @ 300 ft.
COL-PWS-1008141	10/31/2018			387.57	8	VCP	0000	0000	1	1	
COL-PWS-1008433	10/31/2018			185.83	8	VCP	0000	0000	1	1	
COL-PWS-1008446	10/31/2018			35.18	8	VCP	0000	0000	1	1	
COL-PWS-1008695	10/31/2018			193.69	8	PVC	0000	0000	1	1	
COL-PWS-1008714	10/31/2018			193.59	8	PVC	0000	0000	1	1	
COL-PWS-1008738	10/31/2018			194.38	8	PVC	0000	0000	1	1	
COL-PWS-1008753	10/31/2018			118.16	8	PVC	0000	0000	1	1	
COL-PWS-1008762	10/31/2018			74.14	8	PVC	0000	0000	1	1	
COL-PWS-1008774	10/31/2018			92.92	8	PVC	0000	0000	1	1	
COL-PWS-1008816	10/31/2018			341.06	8	PVC	0000	0000	1	1	
COL-PWS-1008824	10/31/2018			304.49	8	PVC	0000	0000	1	1	
COL-PWS-1008829	10/31/2018			50.98	8	PVC	0000	0000	1	1	
COL-PWS-1008858	10/31/2018			82.58	8	PVC	0000	0000	1	1	
COL-PWS-1008860	10/31/2018			196.96	8	PVC	0000	0000	1	1	
COL-PWS-1008863	10/31/2018			51.97	8	PVC	0000	0000	1	1	
COL-PWS-1008874	10/31/2018			143.90	8	PVC	0000	0000	1	1	
COL-PWS-1008773	10/31/2018			18.58	8	PVC	2400	0000	2	1	Sag in pipe, 20%, @ 0 ft.
COL-PWS-1008819	10/31/2018			108.42	8	PVC	2200	0000	2	1	Sag in pipe, 15%, @ 73.84 ft.
COL-PWS-1008857	10/31/2018			338.48	8	PVC	2300	0000	2	1	Sag in pipe, 30%, @ 311 ft.
COL-PWS-1008416	10/31/2018			304.69	8	VCP	0000	0000	1	1	
COL-PWS-1008783	10/31/2018			116.97	8	PVC	0000	0000	1	1	
COL-PWS-1008139	11/1/2018			273.68	8	VCP	5123	0000	5	1	Sag in pipe @ 83ft. Offset joint @ 273 ft. Collapsed pipe, 50% of pipe, @ 273 ft.
COL-PWS-1008308	11/1/2018			338.08	8	VCP	4100	0000	4	1	Multiple fractures @ 206 ft.
COL-PWS-1008222	11/1/2018			253.11	8	VCP	0000	0000	1	1	Downstream MH holds back water. It backs into the pipe.
COL-PWS-1008190	11/1/2018			0.00	8	VCP	0000	0000	1	1	100% full of water because of Downstream lift station.
COL-PWS-1008241	11/1/2018			371.57	8	VCP	0000	0000	1	1	
COL-PWS-1008138	11/1/2018			311.74	8	VCP	0000	0000	1	1	
COL-PWS-1008140	11/1/2018			404.36	8	VCP	0000	0000	1	1	
COL-PWS-1008199	11/1/2018			274.68	8	VCP	0000	1100	1	1	
COL-PWS-1008208	11/1/2018			329.33	8	VCP	0000	0000	1	1	
COL-PWS-1008226	11/1/2018			379.72	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-1008259	11/1/2018			380.31	8	VCP	0000	1200	1	1	
COL-PWS-1008268	11/1/2018			276.27	8	VCP	0000	2100	1	2	Deposits settled @ 0 ft.
COL-PWS-1008273	11/1/2018			137.93	8	VCP	0000	0000	1	1	
COL-PWS-1008276	11/1/2018			154.63	8	VCP	0000	0000	1	1	
COL-PWS-1008139	11/1/2018			23.95	8	VCP	5121	0000	5	1	Broken pipe - 07/11 o'clock, @ 23 ft.
COL-PWS-1008241	11/1/2018			228.07	8	VCP	0000	0000	1	1	
COL-PWS-1007488	11/2/2018			353.88	8	VCP	3200	0000	3	1	Spiral fracture @ 59 ft. Multiple cracks @ 269 ft.
COL-PWS-1007489	11/2/2018			254.11	8	VCP	4200	1100	4	1	Multiple fractures @ 48 ft. & 250 ft. Vermin cockroach @ 254 ft.
COL-PWS-1007485	11/2/2018			151.95	8	VCP	0000	3125	1	3	Tap root @ 32 ft., 37 ft. Deposits attached other @ 32 ft., 51 ft.
COL-PWS-1007283	11/2/2018			148.57	8	VCP	0000	2100	1	2	Deposits settled other @ 148 ft. Needs to be recleaned.
COL-PWS-1007372	11/2/2018			232.74	8	VCP	0000	0000	1	1	
COL-PWS-1007397	11/2/2018			124.62	8	VCP	0000	2100	1	2	Deposits settled other @ 124 ft.
COL-PWS-1007427	11/2/2018			363.52	8	VCP	0000	0000	1	1	
COL-PWS-1007432	11/2/2018			234.33	8	VCP	0000	1100	1	1	Vermin Cockroach @ 234 ft.
COL-PWS-1007486	11/2/2018			144.20	8	VCP	0000	0000	1	1	
COL-PWS-1007524	11/2/2018			124.72	8	VCP	0000	0000	1	1	
COL-PWS-1008450	11/2/2018			21.86	15	VCP	0000	3100	1	3	Deposits settled - Unknown debris under flow, @ 21 ft. Needs to be recleaned.
COL-PWS-1007174	11/5/2018			353.98	8	VCP	3100	0000	3	1	Spiral fracture @ 300 ft.
COL-PWS-1007340	11/5/2018			332.91	8	VCP	3100	0000	3	1	Multiple cracks @ 38 ft.
COL-PWS-1007121	11/5/2018			151.25	8	VCP	0000	0000	1	1	
COL-PWS-1007131	11/5/2018			516.96	8	VCP	0000	1100	1	1	Fine roots at joint @ 194 ft.
COL-PWS-1007156	11/5/2018			99.87	8	VCP	0000	0000	1	1	
COL-PWS-1007157	11/5/2018			322.97	8	VCP	0000	0000	1	1	
COL-PWS-1007181	11/5/2018			356.76	8	VCP	0000	1100	1	1	Fine roots at joint @ 294 ft.
COL-PWS-1007183	11/5/2018			246.45	8	VCP	0000	1600	1	1	Fine roots at joint @ 84 ft, 105 ft, 190 ft and 209 ft.
COL-PWS-1007252	11/5/2018			115.28	8	VCP	0000	1100	1	1	Vermin cockroach @ 115 ft.
COL-PWS-1007254	11/5/2018			321.58	8	VCP	0000	1200	1	1	Vermin cockroach @ 0 ft and 321 ft.
COL-PWS-1007336	11/5/2018			350.90	8	VCP	0000	0000	1	1	
COL-PWS-2006381	11/5/2018			188.02	10	VCP	0000	0000	1	1	
COL-PWS-2006713	11/5/2018			59.82	8	VCP	0000	0000	1	1	
COL-PWS-2006714	11/5/2018			289.78	8	VCP	0000	0000	1	1	
COL-PWS-1007267	11/5/2018			237.11	8	VCP	0000	0000	1	1	
COL-PWS-2006383	11/5/2018			178.48	12	VCP	0000	0000	1	1	Unknown debris under water. Needs to be recleaned. Line not complete.
COL-PWS-1006978	11/6/2018			367.10	8	VCP	4400	0000	4	1	Multiple fractures @ 35 ft, 58 ft, 64 ft, 71 ft, 96 ft and 102 ft.
COL-PWS-1006832	11/6/2018			330.63	8	VCP	0000	5100	1	5	Deposits settled gravel - heavy debris towards the end of the manhole @ 330 ft.
COL-PWS-1006821	11/6/2018			358.05	8	VCP	0000	0000	1	1	
COL-PWS-1007026	11/6/2018			283.22	8	VCP	0000	1100	1	1	Vermin cockroach @ oft.
COL-PWS-1007052	11/6/2018			277.16	8	VCP	0000	1100	1	1	Vermin cockroach @ 276 ft.
COL-PWS-1007055	11/6/2018			98.78	8	VCP	0000	0000	1	1	
COL-PWS-1007132	11/6/2018			252.42	8	VCP	0000	0000	1	1	
COL-PWS-2005795	11/6/2018			113.89	8	VCP	0000	0000	1	1	Line incomplete. No RVP, Upstream MH is a C.O. Camera slipping.
COL-PWS-2005799	11/6/2018			354.18	8	VCP	0000	0000	1	1	
COL-PWS-2005870	11/6/2018			306.18	8	VCP	0000	0000	1	1	
COL-PWS-2006504	11/6/2018			190.21	8	VCP	0000	0000	1	1	
COL-PWS-2006516	11/6/2018			203.13	8	VCP	0000	0000	1	1	
COL-PWS-2006603	11/6/2018			357.56	8	VCP	0000	1100	1	1	Vermin cockroach @ 357 ft.
COL-PWS-2006609	11/6/2018			141.61	8	VCP	0000	0000	1	1	
COL-PWS-1007185	11/6/2018			253.91	8	VCP	2100	0000	2	1	Spiral crack @ 162 ft.
COL-PWS-1007668	11/7/2018			277.36	8	VCP	3100	0000	3	1	Multiple cracks @ 7 ft.
COL-PWS-1007511	11/7/2018			355.77	8	VCP	0000	0000	1	1	
COL-PWS-1007580	11/7/2018			354.28	8	VCP	0000	0000	1	1	
COL-PWS-1007642	11/7/2018			113.89	8	VCP	0000	0000	1	1	
COL-PWS-1007667	11/7/2018			105.04	8	VCP	0000	0000	1	1	

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COL-PWS-1007670	11/7/2018			268.62	8	VCP	0000	0000	1	1	
COL-PWS-1007724	11/7/2018			134.46	8	VCP	0000	0000	1	1	
COL-PWS-1007748	11/7/2018			126.61	8	VCP	0000	0000	1	1	
COL-PWS-1007803	11/7/2018			344.14	8	VCP	0000	0000	1	1	
COL-PWS-2005871	11/7/2018			330.73	8	VCP	0000	0000	1	1	
COL-PWS-2005872	11/7/2018			328.44	8	VCP	0000	0000	1	1	
COL-PWS-1007666	11/7/2018			256.29	8	VCP	0000	1100	1	1	Fine roots at joint @ 162 ft.
COL-PWS-3002293	11/15/2018			158.98	8	PVC	1100	0000	1	1	Medium separated joint @ 28.76 ft.
COL-PWS-1004556	11/16/2018			62.49	8	VCP	5141	0000	5	1	Broken pipe @ 56.56 ft. Water level at 85% @ 62.49 ft.
COL-PWS-1004268	11/16/2018			325.55	8	VCP	5121	1200	5	1	Broken pipe @ 35.37 ft. Circumferential fracture @ 252.9 ft.
COL-PWS-1004405	11/16/2018			369.08	8	VCP	0000	3115	1	3	Fine roots at multiple spots throughout the pipe between 28.6 ft. - 84.45 ft.
COL-PWS-1004606	11/16/2018			179.97	8	VCP	0000	2100	1	2	Deposits attached other - unknown deposits under flow @ 9.33 ft.
COL-PWS-1004168	11/16/2018			307.96	8	VCP	0000	0000	1	1	
COL-PWS-1004218	11/16/2018			211.36	8	VCP	0000	2600	1	2	Deposits attached grease @ 181 ft and 211 ft.
COL-PWS-1004283	11/16/2018			319.72	8	VCP	0000	0000	1	1	
COL-PWS-1004364	11/16/2018			300.67	8	VCP	0000	0000	1	1	
COL-PWS-1004399	11/16/2018			148.20	8	VCP	0000	0000	1	1	
COL-PWS-1004496	11/16/2018			273.17	8	VCP	0000	1100	1	1	Fine roots at lateral @ 33.82 ft.
COL-PWS-1004573	11/16/2018			277.44	8	VCP	0000	0000	1	1	
COL-PWS-1004668	11/16/2018			227.69	8	VCP	0000	0000	1	1	
COL-PWS-1004720	11/16/2018			149.17	8	VCP	0000	0000	1	1	
COL-PWS-1004335	11/16/2018			206.41	8	VCP	2300	0000	2	1	Water level - Sag in Pipe @ 185 ft.
COL-PWS-1004243	11/16/2018			306.02	8	VCP	0000	0000	1	1	
COL-PWS-1004423	11/16/2018			132.26	8	VCP	0000	0000	1	1	
COL-PWS-1004485	11/19/2018			242.46	8	VCP	3100	0000	3	1	Broken pipe @ 124.4 ft.
COL-PWS-1004423	11/19/2018			45.48	8	VCP	0000	2400	1	2	Deposits attached encrustation @ 26.92 ft and 45.48 ft.
COL-PWS-1004237	11/19/2018			185.22	8	VCP	0000	0000	1	1	
COL-PWS-1004365	11/19/2018			188.72	8	VCP	0000	0000	1	1	
COL-PWS-1004379	11/19/2018			226.62	8	VCP	0000	0000	1	1	
COL-PWS-1004388	11/19/2018			238.38	8	VCP	0000	1100	1	1	Fine roots at joint @ 234.4 ft.
COL-PWS-1004450	11/19/2018			185.61	8	VCP	0000	0000	1	1	
COL-PWS-1004469	11/19/2018			110.49	8	VCP	0000	0000	1	1	
COL-PWS-1004488	11/19/2018			156.75	8	VCP	0000	0000	1	1	
COL-PWS-1004480	11/20/2018			0.00	8	VCP	0000	4100	1	4	Pipe alignment down - 45% @ 0 ft. Can't enter pipe.
COL-PWS-1004356	11/20/2018			240.49	8	VCP	3100	0000	3	1	Multiple cracks @ 237 ft.
COL-PWS-1004515	11/20/2018			165.16	8	VCP	5100	5141	5	5	Broken pipe soil visible @ 50ft. Unknown obstacles in pipe @ 162 ft. Pipe alignment down - 45% @ 165 ft.
COL-PWS-1004359	11/20/2018			148.87	8	VCP	0000	3100	1	3	Medium roots at joint @ 146 ft.
COL-PWS-1007666	11/20/2018			273.58	8	VCP	0000	3200	1	3	Medium roots at joint @ 7 ft and 10 ft.
COL-PWS-1004363	11/20/2018			150.16	8	VCP	0000	0000	1	1	
COL-PWS-1004396	11/20/2018			267.42	8	VCP	0000	1200	1	1	Fine roots at joint @ 139 ft and 184 ft.
COL-PWS-1004422	11/20/2018			0.00	8	VCP	0000	0000	1	1	
COL-PWS-1004449	11/20/2018			273.58	8	VCP	0000	0000	1	1	
COL-PWS-1004453	11/20/2018			273.78	8	VCP	0000	0000	1	1	
COL-PWS-1004455	11/20/2018			114.68	8	VCP	0000	2100	1	2	Obstacle pipe material @ 44 ft.
COL-PWS-1004458	11/20/2018			273.29	8	VCP	0000	0000	1	1	
COL-PWS-1004474	11/20/2018			97.79	8	VCP	0000	0000	1	1	
COL-PWS-1004489	11/20/2018			151.45	8	VCP	0000	2100	1	2	Vermin Rat @ 87 ft.
COL-PWS-1007767	11/20/2018			215.25	8	VCP	0000	0000	1	1	
COL-PWS-2005694	11/20/2018			357.36	8	VCP	0000	1100	1	1	Vermin cockroach @ 349 ft.
COL-PWS-2005695	11/20/2018			330.63	8	VCP	0000	1100	1	1	Vermin cockroach @ 330 ft.
COL-PWS-1004243	11/21/2018			308.27	8	VCP	0000	0000	1	1	
COL-PWS-7003638	11/21/2018			215.35	8	RPM	0000	0000	1	1	
COL-PWS-7003687	11/21/2018			242.68	8	RPM	0000	0000	1	1	
COL-PWS-7003705	11/21/2018			190.41	8	RPM	0000	0000	1	1	
COL-PWS-7003736	11/21/2018			112.30	8	RPM	0000	0000	1	1	
COL-PWS-7003747	11/21/2018			367.20	8	RPM	0000	0000	1	1	

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COL-PWS-7003794	11/21/2018			262.35	8	RPM	0000	0000	1	1	
COL-PWS-7003893	11/21/2018			267.12	8	PVC	0000	0000	1	1	
COL-PWS-7003913	11/21/2018			188.92	8	RPM	0000	0000	1	1	
COL-PWS-7003983	11/21/2018			273.78	8	RPM	0000	0000	1	1	
COL-PWS-7004027	11/21/2018			117.76	8	RPM	0000	0000	1	1	
COL-PWS-7003902	11/21/2018			154.73	8	RPM	2300	0000	2	1	Sag in pipe - 20% @ 26 ft.
COL-PWS-1004335	11/21/2018			214.45	8	VCP	0000	0000	1	1	
COL-PWS-3003835	11/26/2018			240.91	8	VCP	5132	4231	5	4	Broken pipe @ 138 ft. Fine roots at joint @ 17 ft, 60 ft & 240 ft. Tap roots in barrel @ 21 ft, 46 ft and 196 ft. Circumferential crack @ 24 ft & 162 ft. Multiple cracks @ 35 ft. Spiral crack @ 217 ft.
COL-PWS-2004204	11/26/2018			126.33	8	VCP	1B00	4111	1	4	Medium offset joint @ 8 ft, 62 ft. Root ball in connection @ 117 ft.
COL-PWS-2004235	11/26/2018			98.44	8	VCP	1200	4121	1	4	Medium offset @ 13 ft, 77 ft. Fine roots at joint @ 31 ft and 98 ft. Root ball in connection @ 92 ft. Deposits settled - 5% @ 96 ft.
COL-PWS-2004671	11/26/2018			254.80	8	VCP	0000	3F2H	1	3	Medium foots at joint @ 4ft, 5 ft & 164 ft. Deposits attached grease - 5% @ 35 ft & 254 ft. Obstacles rocks - 15% @ 58 ft.
COL-PWS-2004223	11/26/2018			173.76	8	VCP	1200	0000	1	1	Medium offset joint @ 23 ft & 157 ft.
COL-PWS-2004296	11/26/2018			87.66	8	VCP	0000	2A00	1	2	Deposits attached grease - 5% @ 29 ft - 87 ft.
COL-PWS-2021702	11/26/2018			234.69	8	VCP	1100	211B	1	2	Fine roots at joint @ 15 ft, 29 ft, 37 ft & 101 ft. Obstacles other - 10 % @ 216 ft. Medium offset joint @ 223 ft.
COL-PWS-3003812	11/26/2018			92.51	8	VCP	0000	0000	1	1	
COL-PWS-2004153	11/26/2018			314.28	8	VCP	2111	3112	2	3	Medium offset joint @ 63 ft. Fine roots at joint @ 28 ft, 114 ft & 310 ft. Spiral crack @ 284 ft.
COL-PWS-2004541	11/26/2018			237.21	8	VCP	2100	2100	2	2	Large offset joint @ 201 ft. Obstacles other - 10 % @ 235 ft.
COL-PWS-2004228	11/26/2018			159.66	8	VCP	1100	0000	1	1	Circumferential crack @ 4 ft.
COL-PWS-2004329	11/26/2018			221.96	8	VCP	0000	1D00	1	1	Fine roots at the joint @ 44 ft, 55 ft and 159 ft.
COL-PWS-3003617	11/26/2018			163.16	8	VCP	0000	0000	1	1	
COL-PWS-3003631	11/27/2018			330.89	8	VCP	5200	1C00	5	1	Hole soil visible @ 107 ft. Broken pipe soil visible @ 273 ft. Fine roots at connection @ 36 ft, 118 ft, 171 ft, 197 ft. Fine roots at joint @ 257 ft & 330 ft.
COL-PWS-3003827	11/27/2018			145.67	8	VCP	5121	3A1B	5	3	Hole soil visible @ 48 ft. Fine root s at joint 2 35 ft, 47 ft, 61 ft, 78 ft, 85 ft, 11 ft & 145 ft.
COL-PWS-1004704	11/27/2018			315.64	8	VCP	5121	2F00	5	2	Hole soil visible @ 148 ft. Deposits attached grease - 5% @ 143 ft - 315 ft. Large offset joint @ 187 ft.
COL-PWS-1004799	11/27/2018			215.06	36	VCP	5111	0000	5	1	Hole soil visible @ 215 ft. Circumferential crack @ 189 ft.
COL-PWS-1004645	11/27/2018			163.16	8	VCP	0000	2E00	1	2	Deposits attached grease - 5% @ 22ft - 163 ft.
COL-PWS-3003617	11/27/2018			201.45	8	VCP	0000	5100	1	5	Deposits settled other - 40% @ 201 ft.
COL-PWS-3003825	11/27/2018			34.50	8	VCP	0000	5100	1	5	Obstacles other - 75 % @ 34 ft.
COL-PWS-1004692	11/27/2018			304.65	36	VCP	0000	4100	1	4	Root ball at connection @ 238 ft.
COL-PWS-3003683	11/27/2018			245.76	8	VCP	0000	0000	1	1	
COL-PWS-3003789	11/27/2018			157.23	8	VCP	2100	0000	2	1	Large offset joint @ 2 ft.
COL-PWS-1004704	11/27/2018			113.50	8	VCP	0000	412B	1	4	Deposits attached grease - 5% @ 29ft - 113 ft. Deposits settled gravel - 25 % @ 112 ft.
COL-PWS-1007584	12/3/2018			348.71	8	VCP	0000	2M00	1	2	HOURLY. Deposits attached grease - 5% @ 0 ft - 348 ft.
COL-PWS-1007582	12/3/2018			6.16	8	VCP	0000	0000	1	1	HOURLY.
COL-PWS-7003275	12/3/2018			355.27	8	RPM	0000	0000	1	1	
COL-PWS-7003525	12/3/2018			279.15	8	RPM	0000	0000	1	1	
COL-PWS-7003561	12/3/2018			175.10	8	RPM	0000	0000	1	1	
COL-PWS-1007585	12/3/2018			262.85	8	VCP	2100	2100	2	2	HOURLY. Deposits attached grease - 5% @ 0 ft - 262 ft.
COL-PWS-7003528	12/3/2018			354.77	8	RPM	2700	0000	2	1	Sag in pipe - 30% @ 184 ft - 217 ft.
COL-PWS-1007630	12/4/2018			248.74	10	VCP	0000	2H00	1	2	HOURLY. Deposits attached grease - 5% @ 0 ft - 248 ft.
COL-PWS-1007682	12/4/2018			16.20	10	VCP	0000	5133	1	5	HOURLY. Deposits attached grease - 15% @ 0 ft - 15 ft. Deposits attached grease - 95% - @ 16ft.
COL-PWS-1007851	12/4/2018			201.83	8	VCP	0000	2G00	1	2	HOURLY. Deposits attached grease - 5% @ 0 ft - 201 ft.

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COL-PWS-1006867	12/4/2018			322.38	8	VCP	0000	0000	1	1	
COL-PWS-1006868	12/4/2018			282.33	8	VCP	0000	0000	1	1	
COL-PWS-7003583	12/4/2018			195.37	8	RPM	0000	0000	1	1	
COL-PWS-7003627	12/4/2018			89.34	8	RPM	0000	0000	1	1	
COL-PWS-7002714	12/6/2018			147.87	8	VCP	0000	0000	1	1	
COL-PWS-7002734	12/6/2018			310.15	8	VCP	0000	0000	1	1	
COL-PWS-7002956	12/6/2018			232.64	8	RPM	0000	0000	1	1	
COL-PWS-7003059	12/6/2018			309.36	8	VCP	0000	0000	1	1	
COL-PWS-7003060	12/6/2018			141.71	8	VCP	0000	0000	1	1	
COL-PWS-7003062	12/6/2018			301.31	8	VCP	0000	0000	1	1	
COL-PWS-7003075	12/6/2018			359.35	8	RPM	0000	0000	1	1	
COL-PWS-7003093	12/6/2018			349.21	8	VCP	0000	1100	1	1	Vermin cockroach @ 349 ft.
COL-PWS-7003096	12/6/2018			190.21	8	VCP	0000	0000	1	1	
COL-PWS-7003158	12/6/2018			137.84	8	VCP	0000	0000	1	1	
COL-PWS-7003436	12/6/2018			6.36	8	RPM	0000	2100	1	2	Deposits attached grease - 5% - 0 - 6ft. Needs to be recleaned.
COL-PWS-7003449	12/6/2018			108.52	8	RPM	0000	0000	1	1	
COL-PWS-7002288	12/7/2018			422.45	8	VCP	3200	0000	3	1	Spiral fracture @ 272 ft. Multiple cracks @ 305 ft.
COL-PWS-7001969	12/7/2018			309.76	8	VCP	0000	0000	1	1	
COL-PWS-7002002	12/7/2018			117.86	8	VCP	0000	0000	1	1	
COL-PWS-7002475	12/7/2018			352.59	8	VCP	0000	0000	1	1	
COL-PWS-7002524	12/7/2018			384.29	8	VCP	0000	0000	1	1	
COL-PWS-7002526	12/7/2018			320.89	8	VCP	0000	0000	1	1	
COL-PWS-7002533	12/7/2018			268.02	8	VCP	0000	1100	1	1	Fine roots @ 68.97 ft.
COL-PWS-7002701	12/7/2018			277.66	8	VCP	0000	0000	1	1	
COL-PWS-7002708	12/7/2018			78.81	8	VCP	0000	0000	1	1	
COL-PWS-7002738	12/7/2018			62.31	8	VCP	0000	0000	1	1	
COL-PWS-7002758	12/7/2018			344.54	8	VCP	0000	0000	1	1	
COL-PWS-7002773	12/7/2018			395.52	8	VCP	0000	1100	1	1	Fine roots @ 44 ft.
COL-PWS-7002812	12/7/2018			256.09	8	VCP	0000	0000	1	1	
COL-PWS-7002844	12/7/2018			306.08	8	VCP	0000	0000	1	1	
COL-PWS-7002845	12/7/2018			100.47	8	VCP	0000	0000	1	1	
COL-PWS-7002972	12/7/2018			199.45	8	VCP	0000	0000	1	1	
COL-PWS-6016354	12/11/2018			475.42	8	VCP	332K	2200	3	2	Spiral crack - @ 113 ft, 130 ft, 180 ft, 194 ft & 474 ft. Multiple cracks - @ 170 ft. Longitudinal crack - @ 184 ft & 191 ft. Broken pipe @ 295 ft & 467 ft ft & H320 ft.
COL-PWS-6016239	12/11/2018			478.50	8	VCP	0000	3100	1	3	Obstacle other - 15% of pipe - @ 474 ft. Unknown debris in line.
COL-PWS-7001271	12/11/2018			121.74	8	VCP	0000	3100	1	3	Deposits settled gravel - 15% - @ 121 ft.
COL-PWS-6015650	12/11/2018			264.54	8	VCP	0000	0000	1	1	
COL-PWS-6015869	12/11/2018			250.93	8	VCP	0000	0000	1	1	
COL-PWS-6016041	12/11/2018			351.40	8	VCP	0000	0000	1	1	
COL-PWS-7001236	12/11/2018			228.77	8	VCP	0000	2100	1	2	Deposits settled fine - 5% - @ 34 ft.
COL-PWS-7001352	12/11/2018			306.08	8	VCP	0000	0000	1	1	
COL-PWS-7001516	12/11/2018			184.84	8	VCP	2300	0000	2	1	Water level - Sag in Pipe @ 168 ft - 184 ft.
COL-PWS-7001541	12/12/2018			103.15	8	VCP	0000	0000	1	1	
COL-PWS-7001455	12/12/2018			329.93	8	VCP	0000	0000	1	1	
COL-PWS-7001465	12/12/2018			25.74	8	VCP	0000	0000	1	1	
COL-PWS-7001495	12/12/2018			53.76	8	VCP	0000	0000	1	1	
COL-PWS-7001561	12/12/2018			235.32	8	PVC	0000	1100	1	1	Vermin cockroach @ 235 ft.
COL-PWS-7001630	12/12/2018			287.20	8	VCP	0000	2100	1	2	Tap root @ 92 ft.
COL-PWS-7001784	12/12/2018			274.98	8	VCP	0000	0000	1	1	
COL-PWS-7001835	12/12/2018			243.77	8	VCP	0000	0000	1	1	
COL-PWS-7001870	12/12/2018			345.93	8	VCP	0000	0000	1	1	
COL-PWS-7001997	12/12/2018			152.44	8	VCP	0000	0000	1	1	
COL-PWS-7002027	12/12/2018			316.22	8	VCP	0000	0000	1	1	
COL-PWS-7002047	12/12/2018			204.72	8	VCP	0000	0000	1	1	
COL-PWS-7002112	12/12/2018			356.27	8	VCP	0000	0000	1	1	
COL-PWS-7002181	12/12/2018			250.23	8	RPM	0000	0000	1	1	
COL-PWS-7002634	12/12/2018			319.10	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-7002687	12/12/2018			248.74	8	VCP	2200	0000	2	1	Water level - Sag in pipe - @ 236 ft.
COL-PWS-7001541	12/12/2018			285.61	8	VCP	0000	0000	1	1	
COL-PWS-7004079	12/17/2018			281.93	8	VCP	3100	0000	3	1	Hole in pipe @ 41 ft.
COL-PWS-7003924	12/17/2018			304.39	8	VCP	0000	3100	1	3	Medium roots @ 178ft.
COL-PWS-7003739	12/17/2018			450.18	8	VCP	0000	0000	1	1	
COL-PWS-7003769	12/17/2018			196.47	8	VCP	0000	0000	1	1	
COL-PWS-7003921	12/17/2018			236.02	8	VCP	0000	0000	1	1	
COL-PWS-7004078	12/17/2018			333.31	8	VCP	0000	0000	1	1	
COL-PWS-7004081	12/17/2018			254.01	8	VCP	0000	0000	1	1	
COL-PWS-7004082	12/17/2018			254.90	8	VCP	0000	0000	1	1	
COL-PWS-7004105	12/17/2018			253.01	8	VCP	0000	0000	1	1	
COL-PWS-7004113	12/17/2018			355.87	8	VCP	0000	0000	1	1	
COL-PWS-7004199	12/17/2018			219.03	8	VCP	0000	0000	1	1	
COL-PWS-7004207	12/17/2018			169.24	8	VCP	0000	0000	1	1	
COL-PWS-7004231	12/17/2018			262.75	8	VCP	0000	0000	1	1	
COL-PWS-7003501	12/17/2018			284.32	8	VCP	0000	0000	1	1	
COL-PWS-7003924	12/17/2018			309.06	8	VCP	0000	0000	1	1	
COL-PWS-7001355	12/18/2018			353.09	8	VCP	4100	0000	4	1	Multiple fractures @ 281 ft.
COL-PWS-7001690	12/18/2018			166.56	8	VCP	0000	4131	1	4	Medium roots in lateral @ 129ft. Root ball in lateral @ 164 ft.
COL-PWS-7001537	12/18/2018			263.75	8	VCP	0000	3100	1	3	Medium roots in lateral @ 145 ft.
COL-PWS-7001978	12/18/2018			184.84	8	PVC	0000	0000	1	1	
COL-PWS-7003501	12/18/2018			301.91	8	VCP	0000	1100	1	1	Fine roots @ 225 ft.
COL-PWS-7001163	12/18/2018			353.18	8	VCP	0000	0000	1	1	
COL-PWS-7001339	12/18/2018			253.11	8	VCP	0000	0000	1	1	
COL-PWS-7001528	12/18/2018			354.48	8	VCP	0000	0000	1	1	
COL-PWS-7001828	12/18/2018			216.14	8	VCP	0000	0000	1	1	
COL-PWS-7001847	12/18/2018			36.47	8	PVC	0000	0000	1	1	
COL-PWS-7001967	12/18/2018			348.12	8	PVC	0000	0000	1	1	
COL-PWS-7002067	12/18/2018			354.08	8	PVC	0000	0000	1	1	
COL-PWS-7002237	12/18/2018			335.10	8	PVC	0000	0000	1	1	
COL-PWS-7003532	12/18/2018			307.47	8	VCP	0000	0000	1	1	
COL-PWS-7001690	12/18/2018			154.53	8	VCP	0000	4100	1	4	Root ball in lateral @ 154 ft.
COL-PWS-7016671	12/19/2018			249.83	8	VCP	3100	3100	3	3	Hole in pipe @ 38 ft. Medium roots in connection @ 40 ft.
COL-PWS-7015967	12/19/2018			354.38	8	VCP	5100	0000	5	1	Broken pipe @ 309 ft. Soil visible.
COL-PWS-7017066	12/19/2018			52.77	8	VCP	0000	2100	1	2	Deposits settled other - 10 % - toilet debris.
COL-PWS-7000888	12/19/2018			375.35	8	VCP	0000	0000	1	1	
COL-PWS-7001049	12/19/2018			341.76	8	VCP	0000	0000	1	1	
COL-PWS-7001104	12/19/2018			385.18	8	VCP	0000	0000	1	1	
COL-PWS-7016698	12/19/2018			160.39	8	VCP	0000	0000	1	1	
COL-PWS-7016736	12/19/2018			164.37	8	VCP	0000	0000	1	1	
COL-PWS-7017106	12/19/2018			201.93	8	VCP	0000	0000	1	1	
COL-PWS-7017155	12/19/2018			44.42	8	VCP	0000	0000	1	1	
COL-PWS-7017169	12/19/2018			333.41	8	VCP	0000	0000	1	1	
COL-PWS-7017292	12/19/2018			261.66	8	VCP	0000	0000	1	1	
COL-PWS-6015334	12/20/2018			401.98	12	VCP	4100	0000	4	1	Fractures @ 96ft.
COL-PWS-2003597	12/20/2018			184.78	8	VCP	3825	0000	3	1	Multiple cracks throughout pipe between 17 ft - 177 ft.
COL-PWS-2003451	12/20/2018			179.07	8	VCP	3124	0000	3	1	Multiple cracks throughout pipe between 7 ft - 126 ft.
COL-PWS-2003828	12/20/2018			263.59	8	VCP	332C	0000	3	1	Multiple cracks throughout pipe between 17 ft - 257 ft.
COL-PWS-6015509	12/20/2018			373.46	8	VCP	4135	0000	4	1	Multiple cracks and fractures through pipe.
COL-PWS-6015782	12/20/2018			362.72	8	VCP	4134	0000	4	1	Multiple cracks and fractures through pipe.
COL-PWS-2003061	12/20/2018			302.59	8	PVC	0000	4321	1	4	Camera underwater @ 286 ft - 302 ft. Tap factory made defective @ 10 o'clock @ 292 ft.
COL-PWS-2003229	12/20/2018			331.57	8	PVC	0000	4L00	1	4	Camera underwater @ 0 ft. - 331 ft. Line is 100% Full of Water
COL-PWS-2003603	12/20/2018			31.18	8	PVC	0000	3100	1	3	Obstacles construction debris - stick in line.
COL-PWS-2003384	12/20/2018			165.13	8	PVC	0000	0000	1	1	
COL-PWS-2003420	12/20/2018			119.01	8	PVC	0000	0000	1	1	
COL-PWS-2003431	12/20/2018			102.17	8	PVC	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-2003445	12/20/2018			84.52	8	PVC	0000	0000	1	1	
COL-PWS-2003468	12/20/2018			82.32	8	PVC	0000	0000	1	1	
COL-PWS-2003514	12/20/2018			118.11	8	PVC	0000	0000	1	1	
COL-PWS-7016734	12/20/2018			2.68	8	VCP	0000	0000	1	1	
COL-PWS-6015625	12/20/2018			347.62	12	VCP	0000	0000	1	1	
COL-PWS-6016031	12/20/2018			137.74	8	VCP	0000	0000	1	1	
COL-PWS-7016575	12/20/2018			322.78	8	VCP	0000	0000	1	1	
COL-PWS-7016607	12/20/2018			327.94	8	VCP	0000	2	1	2	
COL-PWS-7016639	12/20/2018			130.28	8	VCP	0000	0000	1	1	
COL-PWS-7016807	12/20/2018			249.83	8	VCP	0000	0000	1	1	
COL-PWS-7016853	12/20/2018			199.25	8	VCP	0000	2C00	1	2	Deposits attached grease - @ 103 ft and 198 ft.
COL-PWS-7016903	12/20/2018			70.46	8	VCP	0000	2100	1	2	Vermin - Rat @ 70 ft.
COL-PWS-2003699	12/20/2018			213.06	8	VCP	2111	0000	2	1	Cracks at 28 ft. and 172 ft.
COL-PWS-6016034	12/20/2018			299.02	8	VCP	2100	0000	2	1	Spiral crack @ 13 ft.
COL-PWS-6016354	12/20/2018			476.81	8	VCP	4231	2200	4	1	Multiple fractures @ 158 ft. & 224 ft. Multiple cracks @ 307 ft & 363 ft.
COL-PWS-2003431	12/20/2018			235.92	8	PVC	0000	0000	1	1	
COL-PWS-2003514	12/20/2018			117.51	8	PVC	0000	0000	1	1	
COL-PWS-2003603	12/20/2018			275.62	8	PVC	0000	0000	1	1	
COL-PWS-7016734	12/20/2018			169.83	8	VCP	0000	0000	1	1	
COL-PWS-7017066	12/20/2018			51.38	8	VCP	0000	2100	1	2	Rock in line @ 49 ft.
COL-PWS-1005680	12/20/2018			27.10	6	VCP	2100	1100	2	1	Spiral crack - @ 6 ft. Finer roots at joint @ 24 ft.
COL-PWS-6017447	12/26/2018			208.39	8	VCP	3100	0000	3	1	Broken pipe @ 80 ft.
COL-PWS-2020243	12/26/2018			314.25	8	VCP	3221	0000	3	1	Fractures @ 73 ft, 102 ft & 282 ft. Separated joint @ 214 ft.
COL-PWS-2003030	12/26/2018			299.29	8	VCP	5141	3312	5	3	Broken pipe @ 71 ft. & 127 ft. Fine roots through pipe.
COL-PWS-6017444	12/26/2018			287.20	8	VCP	5200	0000	5	1	Broken pipe @ 152 ft. & 285 ft.
COL-PWS-2002960	12/26/2018			324.52	8	VCP	3112	0000	3	1	Offset joint @ 8 ft & 32 ft. Fracture @ 149 ft.
COL-PWS-2003141	12/26/2018			191.15	8	VCP	3100	0000	3	1	Spiral crack @ 31 ft.
COL-PWS-2003714	12/26/2018			173.06	8	VCP	3100	0000	3	1	Fracture @ 118 ft.
COL-PWS-2003029	12/26/2018			296.17	8	VCP	4100	0000	4	1	Fractures @ 130 ft.
COL-PWS-2003764	12/26/2018			228.41	8	VCP	4233	2100	4	2	Multiple cracks and fractures through pipe. Grease @ 3 ft
COL-PWS-6015277	12/26/2018			474.32	8	VCP	4100	0000	4	1	Fracture @ 141 ft.
COL-PWS-2002639	12/26/2018			314.35	8	VCP	5123	0000	5	1	Broken pipe @ 133 ft. Offset joints @ 21 ft, 22 ft. & 106 ft.
COL-PWS-2002942	12/26/2018			150.09	8	VCP	5121	0000	5	1	Broken pipe @ 43 ft. Fracture @ 93 ft.
COL-PWS-5015977	12/26/2018			310.06	8	VCP	0000	2J00	1	2	Grease @ 14 ft - 298 ft.
COL-PWS-5016092	12/26/2018			314.73	8	VCP	0000	2E11	1	2	Grease @ 166 ft. - 311 ft. Vermin - Cockroach @ 279 ft.
COL-PWS-6017452	12/26/2018			498.67	8	VCP	0000	3100	1	3	Tab Break-In Intruding @ 430 ft @ 10 o'clock.
COL-PWS-2002558	12/26/2018			381.04	8	VCP	1100	0000	1	1	Offset joint 159 ft.
COL-PWS-2002838	12/26/2018			146.27	8	VCP	0000	0000	1	1	
COL-PWS-2002985	12/26/2018			170.23	8	VCP	0000	1200	1	1	Fine roots @ 19 ft., 31 ft. & 168 ft.
COL-PWS-2003111	12/26/2018			294.01	8	VCP	1200	0000	1	1	
COL-PWS-2003195	12/26/2018			283.26	8	VCP	0000	0000	1	1	
COL-PWS-6016793	12/26/2018			404.96	8	VCP	0000	0000	1	1	
COL-PWS-5016208	12/26/2018			301.91	8	VCP	0000	0000	1	1	
COL-PWS-5016326	12/26/2018			320.89	8	VCP	0000	0000	1	1	
COL-PWS-5016438	12/26/2018			299.12	8	VCP	0000	0000	1	1	
COL-PWS-5016549	12/26/2018			297.43	8	VCP	0000	0000	1	1	
COL-PWS-2002549	12/26/2018			154.59	8	VCP	2212	0000	2	1	Offset joint @ 36 ft., 66 ft. & 144 ft. Separated joint @ 66 ft.
COL-PWS-2002960	12/26/2018			56.12	8	VCP	0000	0000	1	1	
COL-PWS-2003198	12/26/2018			132.00	8	VCP	0000	0000	1	1	
COL-PWS-6016793	12/26/2018			285.11	8	VCP	0000	0000	1	1	
COL-PWS-2002650	12/27/2018			153.12	8	VCP	5122	0000	5	1	Broken pipe between 60 ft. & 65 ft. Multiple offset joints throughout pipe.
COL-PWS-2002274	12/27/2018			254.12	8	VCP	0000	3311	1	3	Medium roots @ 145 ft., 155 ft., 162 ft., 199 ft. & 206 ft.
COL-PWS-2002809	12/27/2018			217.36	8	VCP	1400	0000	1	1	Joint angular @ 36 ft. Offset joint @ 42 ft., 132 ft. & 169 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-2002850	12/27/2018			285.12	8	VCP	1100	0000	1	1	Offset joint @ 281 ft.
COL-PWS-2002958	12/27/2018			317.19	8	VCP	0000	0000	1	1	
COL-PWS-2002999	12/27/2018			273.09	8	VCP	1200	0000	1	1	Offset joint @ 72 ft. & 128 ft.
COL-PWS-2003291	12/27/2018			269.67	8	VCP	0000	0000	1	1	
COL-PWS-5016357	12/27/2018			311.65	8	VCP	0000	0000	1	1	
COL-PWS-2002998	12/27/2018			243.66	8	VCP	1100	0000	1	1	Offset joint @ 223 ft.
COL-PWS-2003475	12/27/2018			260.87	8	VCP	0000	0000	1	1	
COL-PWS-5016245	12/27/2018			315.52	8	VCP	0000	2800	1	2	Grease - 5% - between 7 ft - 48 ft.
COL-PWS-5016461	12/27/2018			345.93	8	VCP	0000	0000	1	1	
COL-PWS-5016490	12/27/2018			310.85	8	VCP	0000	0000	1	1	
COL-PWS-5016579	12/27/2018			298.43	8	VCP	0000	0000	1	1	
COL-PWS-5016580	12/27/2018			349.11	8	VCP	0000	0000	1	1	
COL-PWS-5016625	12/27/2018			344.74	8	VCP	0000	0000	1	1	
COL-PWS-5016696	12/27/2018			297.73	8	VCP	0000	0000	1	1	
COL-PWS-5016756	12/27/2018			358.55	8	VCP	0000	0000	1	1	
COL-PWS-2002309	12/27/2018			376.05	8	VCP	2100	3213	2	3	Medium & Fine roots @ 174 ft., 253 ft., 263 ft., 268 ft., 273 ft. Water level - sag in pipe - 15% - between 372 ft. - 376 ft.
COL-PWS-2002386	12/27/2018			255.20	8	VCP	2100	0000	2	1	Water level - sag in pipe - 10 % - between 4 ft. - 75 ft.
COL-PWS-2002643	12/27/2018			203.38	8	VCP	2111	0000	2	1	Offset joint @ 57 ft. Water level - sag in pipe - 5 % @ 173 ft.
COL-PWS-2002715	12/27/2018			192.13	8	VCP	2413	0000	2	1	Offset joints @ 5 ft., 27 ft., 116 ft. & 182 ft. Water level - sag in pipe - 9 ft - 33 ft, 171 ft. - 191 ft.
COL-PWS-2002775	12/27/2018			228.41	8	VCP	2200	0000	2	1	Offset joint @ 212 ft. Water level - sag in pipe - 10 % @ 217 ft.
COL-PWS-2002860	12/27/2018			239.16	8	VCP	2112	0000	2	1	Water level - sag in pipe @ 65 ft. Offset joint @ 122 ft. & 160 ft.
COL-PWS-2002187	12/27/2018			290.10	8	VCP	0000	3311	1	3	Medium roots @ 91 ft., 93 ft., 101 ft., 109 ft. & 286 ft.
COL-PWS-2002805	12/27/2018			257.06	8	VCP	0000	1400	1	1	Fine roots at joint - 70 ft., 95 ft., 107 ft. & 126 ft.
COL-PWS-2003180	12/27/2018			206.02	8	VCP	0000	0000	1	1	
COL-PWS-2003281	12/27/2018			134.44	8	VCP	0000	0000	1	1	
COL-PWS-5015977	12/27/2018			309.86	8	VCP	0000	0000	1	1	
COL-PWS-5016357	12/27/2018			0.00	8	VCP	0000	0000	1	1	
COL-PWS-2002026	12/28/2018			247.28	8	VCP	5121	0000	5	1	Broken pipe @ 194 ft. - 198 ft. Crack @ 204 ft.
COL-PWS-2001231	12/28/2018			250.02	8	VCP	1100	3215	1	3	Medium and Fine roots throughout pipe. Cracks @ 167 ft.
COL-PWS-2000821	12/28/2018			153.41	8	VCP	0000	1100	1	1	Fine roots @ 143 ft.
COL-PWS-2001146	12/28/2018			192.72	8	VCP	0000	0000	1	1	
COL-PWS-2001182	12/28/2018			355.13	8	VCP	0000	0000	1	1	
COL-PWS-2001347	12/28/2018			289.13	8	VCP	0000	0000	1	1	
COL-PWS-2001360	12/28/2018			150.09	8	VCP	0000	0000	1	1	
COL-PWS-2001386	12/28/2018			89.66	8	VCP	0000	0000	1	1	
COL-PWS-2001442	12/28/2018			286.09	8	VCP	0000	0000	1	1	
COL-PWS-2001610	12/28/2018			335.18	8	VCP	0000	0000	1	1	
COL-PWS-2001763	12/28/2018			352.78	8	VCP	0000	0000	1	1	
COL-PWS-2001822	12/28/2018			374.00	8	VCP	0000	1400	1	1	Fine roots @ 73 ft., 106 ft., 233 ft. & 288 ft.
COL-PWS-2000924	12/28/2018			335.47	8	VCP	0000	3416	1	3	Medium and Fine roots throughout pipe.
COL-PWS-2000961	12/28/2018			55.54	8	VCP	0000	3211	1	3	Fine roots @ 36 ft. Medium roots @ 46 ft., 51 ft. & 55 ft.
COL-PWS-2001039	12/28/2018			251.48	8	VCP	0000	3214	1	3	Medium and Fine roots throughout pipe.
COL-PWS-2001400	12/28/2018			266.15	8	VCP	0000	3111	1	3	Medium roots @ 54 ft. Fine roots @ 121 ft
COL-PWS-2001873	12/28/2018			197.02	8	VCP	0000	3312	1	3	Medium roots @ 53 ft., 154 ft. & 159 ft. Fine roots @ 62 ft. & 194 ft.
COL-PWS-2001588	12/28/2018			248.74	8	VCP	0000	0000	1	1	
COL-PWS-2001947	12/28/2018			229.38	8	VCP	0000	1200	1	1	Fine roots @ 121 ft. & 188 ft.
COL-PWS-2002184	12/28/2018			209.83	8	VCP	0000	0000	1	1	
COL-PWS-5016900	1/2/2019			257.09	8	VCP	3321	0000	3	1	Cracks @ 87 ft., 201 ft., 232 ft. & 252 ft.
COL-PWS-5017077	1/2/2019			254.60	8	VCP	3423	0000	3	1	Cracks @ 5 ft., 73 ft., 124 ft., 178 ft., 202 ft., 219 ft. & 247 ft.
COL-PWS-5017198	1/2/2019			318.30	8	VCP	3223	0000	3	1	Cracks @ 11 ft., 15 ft., 55 ft., 120 ft., & 216 ft.
COL-PWS-5017242	1/2/2019			259.17	8	VCP	3100	0000	3	1	Cracks @ 255 ft.

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COL-PWS-5016770	1/2/2019			242.48	8	VCP	4100	0000	4	1	Multiple fractures @ 82 ft.
COL-PWS-5016534	1/2/2019			275.67	8	VCP	0000	0000	1	1	
COL-PWS-5016011	1/2/2019			352.79	8	VCP	0000	0000	1	1	
COL-PWS-5016124	1/2/2019			352.39	8	VCP	0000	0000	1	1	
COL-PWS-5016426	1/2/2019			292.76	8	VCP	0000	0000	1	1	
COL-PWS-5016640	1/2/2019			352.69	8	VCP	0000	0000	1	1	
COL-PWS-5016681	1/2/2019			99.87	8	VCP	0000	0000	1	1	
COL-PWS-5016828	1/2/2019			245.76	8	VCP	0000	0000	1	1	
COL-PWS-5017011	1/2/2019			245.66	8	VCP	0000	0000	1	1	
COL-PWS-5017351	1/2/2019			259.77	8	VCP	0000	0000	1	1	
COL-PWS-5016738	1/2/2019			269.51	8	VCP	2100	0000	2	1	Spiral crack @ 253 ft.
COL-PWS-5016534	1/2/2019			29.32	8	VCP	0000	0000	1	1	
COL-PWS-5015632	1/3/2019			154.43	8	VCP	3100	0000	3	1	Multiple cracks @ 108 ft.
COL-PWS-5015911	1/3/2019			171.52	8	PVC	3200	0000	3	1	Lining failure - Under cut - @ 166 ft. Lining failure - Under cut - @ 168 ft.
COL-PWS-5015938	1/3/2019			360.44	8	VCP	3121	0000	3	1	Cracks @ 303 ft. & 341 ft.
COL-PWS-5010857	1/3/2019			256.19	8	VCP	3100	3100	3	3	Spiral fracture @ 180 ft. Intruding Tap @ 255 ft.
COL-PWS-5015417	1/3/2019			396.02	8	VCP	4100	0000	4	1	Multiple fractures @ 11 ft.
COL-PWS-5015724	1/3/2019			109.31	8	VCP	4100	0000	4	1	Multiple fractures @ 105 ft.
COL-PWS-5016530	1/3/2019			351.30	8	VCP	5131	1100	5	1	Deformed pipe @ 152 ft. Fracture @ 306 ft.
COL-PWS-5015507	1/3/2019			335.59	8	VCP	0000	0000	1	1	
COL-PWS-5015523	1/3/2019			366.60	8	VCP	0000	0000	1	1	
COL-PWS-5015592	1/3/2019			314.23	8	VCP	0000	0000	1	1	
COL-PWS-5015597	1/3/2019			244.86	8	VCP	0000	0000	1	1	
COL-PWS-5015696	1/3/2019			223.50	8	VCP	0000	0000	1	1	
COL-PWS-5015712	1/3/2019			158.01	8	VCP	0000	0000	1	1	
COL-PWS-5015719	1/3/2019			30.01	8	VCP	0000	0000	1	1	
COL-PWS-5015737	1/3/2019			309.66	8	VCP	0000	0000	1	1	
COL-PWS-5015910	1/3/2019			349.81	8	VCP	0000	0000	1	1	
COL-PWS-5010857	1/3/2019			10.43	8	VCP	0000	3100	1	3	Intruding Tap @ 10 ft.
COL-PWS-5016717	1/3/2019			350.80	8	VCP	0000	0000	1	1	
COL-PWS-5015241	1/4/2019			223.70	8	VCP	3421	0000	3	1	Cracks @ 15 ft., 21 ft., 38 ft., 127 ft. & 215 ft.
COL-PWS-5015276	1/4/2019			224.19	8	VCP	3300	0000	3	1	Cracks @ 20 ft., 46 ft. & 106 ft.
COL-PWS-5015460	1/4/2019			400.79	8	VCP	3322	0000	3	1	Cracks @ 128 ft., 172 ft., 344 ft., 388 ft. & 391 ft.
COL-PWS-5015496	1/4/2019			395.22	8	VCP	3100	1100	3	1	Multiple cracks @ 205 ft. Vermin cockroach @ 395 ft.
COL-PWS-2017405	1/4/2019			351.32	8	VCP	4200	0000	4	1	Pipe deformed - 283 ft. & 290 ft - 5%.
COL-PWS-5015121	1/4/2019			164.87	8	VCP	4200	0000	4	1	Multiple fractures @ 8 ft. & 83 ft.
COL-PWS-2000729	1/4/2019			256.37	8	VCP	5131	3111	5	3	Hole - Soil visible @ 87 ft. Foots fine @ 9 ft. Multiple cracks @ 87 ft.
COL-PWS-5015291	1/4/2019			244.57	8	VCP	5131	0000	5	1	Broken pipe - soil visible @ 240 ft. Multiple cracks @ 181 ft. Offset joint @ 240 ft.
COL-PWS-2000043	1/4/2019			258.28	8	PVC	1100	5126	1	5	Obstacle other - blue plaster - 35% @ 246 ft. Deposits settled - gravel - 10 % @ 87 ft. - 120 ft. Separated joint @ 197 ft.
COL-PWS-2000388	1/4/2019			270.51	8	VCP	0000	4132	1	4	Roots @ 9 ft., 16 ft., 44 ft. & 182 ft.
COL-PWS-5016417	1/4/2019			336.69	8	VCP	0000	0000	1	1	
COL-PWS-2000044	1/4/2019			172.85	8	PVC	0000	0000	1	1	
COL-PWS-2000145	1/4/2019			167.94	8	VCP	1200	0000	1	1	Offset joint @ 141 ft. & 144 ft.
COL-PWS-2000386	1/4/2019			139.16	8	VCP	0000	0000	1	1	
COL-PWS-2000389	1/4/2019			145.88	8	VCP	0000	1B00	1	1	
COL-PWS-2000479	1/4/2019			214.36	8	VCP	0000	0000	1	1	
COL-PWS-2000661	1/4/2019			171.35	8	VCP	0000	0000	1	1	
COL-PWS-2000712	1/4/2019			134.15	8	VCP	0000	0000	1	1	
COL-PWS-2000782	1/4/2019			177.87	8	VCP	0000	0000	1	1	
COL-PWS-2000799	1/4/2019			284.14	8	VCP	0000	0000	1	1	
COL-PWS-2000890	1/4/2019			207.84	8	VCP	0000	0000	1	1	
COL-PWS-2000990	1/4/2019			221.98	8	VCP	0000	1100	1	1	Fine roots at joint @ 220 ft.
COL-PWS-2017254	1/4/2019			242.64	8	PVC	0000	0000	1	1	
COL-PWS-2017619	1/4/2019			170.25	8	VCP	0000	0000	1	1	
COL-PWS-5015052	1/4/2019			339.87	8	VCP	0000	0000	1	1	

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COL-PWS-5015189	1/4/2019			279.25	8	VCP	0000	0000	1	1	
COL-PWS-5015293	1/4/2019			278.75	8	VCP	0000	0000	1	1	
COL-PWS-5015360	1/4/2019			128.89	8	VCP	0000	0000	1	1	
COL-PWS-5015375	1/4/2019			401.78	8	VCP	0000	0000	1	1	
COL-PWS-5015433	1/4/2019			396.41	8	VCP	0000	0000	1	1	
COL-PWS-5015488	1/4/2019			232.34	8	VCP	0000	0000	1	1	
COL-PWS-5016302	1/4/2019			328.54	8	VCP	0000	0000	1	1	
COL-PWS-2000600	1/4/2019			208.04	8	VCP	2100	1100	2	1	Fracture @ 4 ft. Fine roots @ 56 ft.
COL-PWS-5015229	1/4/2019			96.79	8	VCP	2200	0000	2	1	Spiral cracks @ 55 ft. & 72 ft.
COL-PWS-5015104	1/7/2019			285.31	8	VCP	3521	0000	3	1	Cracks @ 57 ft., 67 ft., 122 ft., 245 ft., 261 ft. & 275 ft.
COL-PWS-5015190	1/7/2019			248.14	8	VCP	3100	0000	3	1	Multiple cracks @ 224 ft.
COL-PWS-5015275	1/7/2019			279.25	8	VCP	3622	0000	3	1	Cracks @ 5 ft., 34 ft., 42 ft., 78 ft., 106 ft., 197 ft., 271 ft. & 276 ft.
COL-PWS-2017024	1/7/2019			331.37	8	VCP	3100	0000	3	1	Hole @ 80 ft.
COL-PWS-1001783	1/7/2019			204.12	8	VCP	0000	0000	1	1	
COL-PWS-2000373	1/7/2019			296.78	8	VCP	0000	1100	1	1	Fine roots @ 74 ft/
COL-PWS-2017321	1/7/2019			207.24	8	VCP	0000	0000	1	1	
COL-PWS-2017710	1/7/2019			125.23	8	VCP	0000	0000	1	1	
COL-PWS-2017736	1/7/2019			174.66	8	VCP	0000	0000	1	1	
COL-PWS-2017790	1/7/2019			228.90	8	VCP	0000	0000	1	1	
COL-PWS-2017858	1/7/2019			224.49	8	VCP	0000	0000	1	1	
COL-PWS-2017931	1/7/2019			339.99	8	VCP	0000	0000	1	1	
COL-PWS-5015501	1/7/2019			255.60	8	VCP	0000	0000	1	1	
COL-PWS-5015504	1/7/2019			99.38	8	VCP	0000	0000	1	1	
COL-PWS-5015636	1/7/2019			194.78	8	VCP	0000	0000	1	1	
COL-PWS-5015805	1/7/2019			381.01	8	VCP	0000	0000	1	1	
COL-PWS-5015406	1/7/2019			146.38	8	VCP	2100	3100	2	3	Deposits settled - 20% @ 146 ft.
COL-PWS-5014955	1/8/2019			260.37	8	VCP	3300	0000	3	1	Cracks @ 8 ft. & 186 ft. Fracture @ 256 ft.
COL-PWS-5014835	1/8/2019			352.49	8	VCP	0000	3100	1	3	Medium roots @ 230 ft.
COL-PWS-5014265	1/8/2019			300.71	8	VCP	0000	0000	1	1	
COL-PWS-5014621	1/8/2019			293.36	8	VCP	0000	0000	1	1	
COL-PWS-5014659	1/8/2019			100.07	8	VCP	0000	0000	1	1	
COL-PWS-5014715	1/8/2019			282.33	8	VCP	0000	0000	1	1	
COL-PWS-5014756	1/8/2019			343.15	8	VCP	0000	0000	1	1	
COL-PWS-5014791	1/8/2019			195.08	8	VCP	0000	0000	1	1	
COL-PWS-5014811	1/8/2019			117.46	8	VCP	0000	0000	1	1	
COL-PWS-5014836	1/8/2019			297.93	8	VCP	0000	0000	1	1	
COL-PWS-5014863	1/8/2019			202.73	8	VCP	0000	0000	1	1	
COL-PWS-5014941	1/8/2019			290.78	8	VCP	0000	0000	1	1	
COL-PWS-5014959	1/8/2019			100.07	8	VCP	0000	0000	1	1	
COL-PWS-5014991	1/8/2019			271.99	8	VCP	0000	0000	1	1	
COL-PWS-5015073	1/8/2019			266.13	8	VCP	0000	0000	1	1	
COL-PWS-5015109	1/8/2019			298.92	8	VCP	0000	0000	1	1	
COL-PWS-5014423	1/8/2019			21.47	8	VCP	0000	0000	1	1	
COL-PWS-5015437	1/10/2019			198.46	10	VCP	3200	1100	3	1	Vermin cockroach @ 198 ft.
COL-PWS-5015472	1/10/2019			274.18	8	VCP	3100	1100	3	1	Multiple cracks @161 ft. Fine roots @ 184 ft.
COL-PWS-5016419	1/10/2019			42.14	8	VCP	3100	4731	3	4	Camera underwater @ 7 ft. - 42 ft. Intruding tap @ 42 ft. Lining failure - Under cut - @ 42 ft.
0	1/10/2019			662.84	12	RCP	0000	0000	1	1	
COL-PWS-5015305	1/10/2019			125.61	10	VCP	0000	0000	1	1	
COL-PWS-5015351	1/10/2019			302.11	8	VCP	0000	0000	1	1	
COL-PWS-5015370	1/10/2019			167.45	10	VCP	0000	0000	1	1	
COL-PWS-5015459	1/10/2019			47.70	8	RPM	0000	2100	1	2	Deposits settled gravel @ 47 ft.
COL-PWS-5015524	1/10/2019			136.05	8	VCP	0000	1100	1	1	Vermin cockroach @ 136 ft.
COL-PWS-5015617	1/10/2019			268.42	8	RPM	0000	0000	1	1	
COL-PWS-5015449	1/10/2019			129.29	10	VCP	2100	1100	2	1	Fine roots @ 82 ft. Spiral crack @ 124 ft.
COL-PWS-5015260	1/10/2019			253.81	10	VCP	0000	0000	1	1	
COL-PWS-5014575	1/11/2019			266.63	15	VCP	0000	0000	1	1	
COL-PWS-5014705	1/11/2019			264.74	15	VCP	0000	0000	1	1	
COL-PWS-5014771	1/11/2019			62.71	8	VCP	0000	0000	1	1	

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COL-PWS-5014815	1/11/2019			142.11	8	VCP	0000	0000	1	1	
COL-PWS-5014850	1/11/2019			415.99	15	VCP	0000	0000	1	1	
COL-PWS-5014857	1/11/2019			22.96	8	VCP	0000	0000	1	1	
COL-PWS-5014858	1/11/2019			268.52	8	VCP	0000	0000	1	1	
COL-PWS-5014872	1/11/2019			107.33	8	VCP	0000	0000	1	1	
COL-PWS-5014877	1/11/2019			165.86	8	VCP	0000	0000	1	1	
COL-PWS-5014901	1/11/2019			54.66	8	VCP	0000	0000	1	1	
COL-PWS-5014915	1/11/2019			24.74	8	VCP	0000	0000	1	1	
COL-PWS-5014960	1/11/2019			247.94	8	VCP	0000	0000	1	1	
COL-PWS-5014972	1/11/2019			284.22	8	VCP	0000	0000	1	1	
COL-PWS-5015039	1/11/2019			265.34	8	VCP	0000	0000	1	1	
COL-PWS-5015055	1/11/2019			305.19	8	VCP	0000	0000	1	1	
COL-PWS-5015076	1/11/2019			141.02	8	VCP	0000	0000	1	1	
COL-PWS-5015128	1/11/2019			192.19	8	VCP	0000	0000	1	1	
COL-PWS-7011899	1/14/2019			281.93	8	RPM	0000	0000	1	1	
COL-PWS-7012014	1/14/2019			217.73	8	RPM	0000	0000	1	1	
COL-PWS-7012015	1/14/2019			298.63	8	RPM	0000	0000	1	1	
COL-PWS-7012047	1/14/2019			192.00	8	RPM	0000	0000	1	1	
COL-PWS-7012141	1/14/2019			269.81	8	RPM	0000	0000	1	1	
COL-PWS-7012146	1/14/2019			279.15	8	RPM	0000	0000	1	1	
COL-PWS-7012162	1/14/2019			147.87	8	RPM	0000	0000	1	1	
COL-PWS-7012172	1/14/2019			254.30	8	RPM	0000	0000	1	1	
COL-PWS-7012174	1/14/2019			260.17	8	RPM	0000	0000	1	1	
COL-PWS-7012226	1/14/2019			221.81	8	RPM	0000	0000	1	1	
COL-PWS-7012281	1/14/2019			243.57	8	RPM	0000	0000	1	1	
COL-PWS-5015606	1/14/2019			384.99	15	VCP	0000	2100	1	2	Deposits settled other - Debris under the flow. Dirty, needs to be recleaned. Downstream MH requires traffic control.
COL-PWS-7011136	1/15/2019			154.63	8	VCP	3200	3111	3	3	Cracks @ 69 ft. & 132 ft. Roots @ 76 ft. & 97 ft.
COL-PWS-7010068	1/15/2019			352.49	8	VCP	3K21	0000	3	1	Cracks @ 4 ft., 16 ft., 50 ft., 70 ft., 77 ft., & 352 ft.
COL-PWS-7011180	1/15/2019			306.88	8	VCP	3200	0000	3	1	Cracks @ 38 ft. & 302 ft.
COL-PWS-7010070	1/15/2019			355.17	8	VCP	4333	0000	4	1	Cracks @ 29 ft., 147 ft. & 157 ft. Repair patch @ 177 ft. & 209 ft. Fractures @ 245 ft.
COL-PWS-7011008	1/15/2019			288.99	8	VCP	5244	1100	5	1	Broken pipe @ 110 ft. & 185 ft. Fractures @ 91 ft., 131 ft., 194 ft., 265 ft. & 276 ft. Fine roots @ 15 ft.
COL-PWS-7011026	1/15/2019			283.02	8	VCP	543E	0000	5	1	Broken pipe @ 34 ft., 172 ft. & 185 ft. Cracks @ 1 ft., 8 ft., 31 ft., 48 ft., 54 ft., 172 ft., 256 ft., & 267 ft.
COL-PWS-7010063	1/15/2019			515.67	8	VCP	413S	0000	4	1	Cracks @ 27 ft., 515 ft. fractures @ 416 ft.
COL-PWS-7011511	1/15/2019			285.71	8	VCP	0000	3200	1	3	Intruding Tap @ 140 ft. Medium roots at joint @ 142 ft.
COL-PWS-7001060	1/15/2019			88.25	8	VCP	0000	2600	1	2	Fine roots at Barrel @ 7 ft. & 36ft.
COL-PWS-7011318	1/15/2019			110.41	8	VCP	0000	0000	1	1	
COL-PWS-7011320	1/15/2019			151.15	8	VCP	0000	0000	1	1	
COL-PWS-7011333	1/15/2019			214.65	8	VCP	0000	0000	1	1	
COL-PWS-7011437	1/15/2019			252.81	8	VCP	0000	0000	1	1	
COL-PWS-7011444	1/15/2019			112.49	8	VCP	0000	0000	1	1	
COL-PWS-7011631	1/15/2019			352.99	8	VCP	0000	0000	1	1	
COL-PWS-7011151	1/15/2019			105.14	8	VCP	2100	3121	2	3	Heavy roots @ 103 t. Fine roots @ 70 ft. & 76 ft. Needs recleaning.
COL-PWS-7011283	1/15/2019			25.94	8	VCP	5100	0000	5	1	Broken pipe @ 25 ft.
COL-PWS-7010065	1/15/2019			9.54	8	VCP	0000	0000	1	1	
COL-PWS-7011136	1/15/2019			21.76	8	VCP	0000	0000	1	1	
COL-PWS-2016757	1/16/2019			186.83	8	PVC	3100	0000	3	1	Cracks @ 60 & 64 ft.
COL-PWS-2016912	1/16/2019			236.22	8	VCP	0000	3121	1	3	Fine roots At Barrel @ 9 ft. Medium roots in connection @ 14 ft.
COL-PWS-2016960	1/16/2019			265.04	8	PVC	0000	0000	1	1	
COL-PWS-2017094	1/16/2019			352.99	8	VCP	0000	0000	1	1	
COL-PWS-2017332	1/16/2019			68.77	8	VCP	0000	0000	1	1	
COL-PWS-2016294	1/16/2019			290.08	8	VCP	0000	0000	1	1	
COL-PWS-2016533	1/16/2019			148.97	8	VCP	0000	0000	1	1	
COL-PWS-2016003	1/16/2019			103.15	8	VCP	0000	0000	1	1	

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COL-PWS-2016067	1/16/2019			335.40	8	VCP	0000	0000	1	1	
COL-PWS-2016224	1/16/2019			268.71	8	PVC	0000	0000	1	1	
COL-PWS-2016479	1/16/2019			98.38	8	VCP	0000	0000	1	1	
COL-PWS-2016718	1/16/2019			214.16	8	PVC	0000	0000	1	1	
COL-PWS-2016744	1/16/2019			190.80	8	PVC	0000	0000	1	1	
COL-PWS-4016051	1/17/2019			139.52	8	VCP	0000	5100	1	5	Heavy root ball @ 138 ft - 60%. Needs to be recleaned.
COL-PWS-4016247	1/17/2019			304.79	8	VCP	0000	423C	1	4	Construction debris @ 149 ft. Roots @ 161 ft., 167 ft., 171 ft., 183 ft., 186 ft., 212 ft., 223 ft., 227 ft., 237 ft. & 304 ft.
COL-PWS-4015490	1/17/2019			134.56	8	VCP	1100	5100	1	5	Obstacle other - heavy debris @ 134 ft - 50%. Offset joint @ 132 ft. Needs to be recleaned.
COL-PWS-4016446	1/17/2019			305.78	8	VCP	0000	4231	1	4	Roots @ 13 ft., 147 ft., 156 ft., 158 ft., 160 ft., 190 ft., 233 ft., 235 ft. & 261 ft.
COL-PWS-4016269	1/17/2019			175.80	8	VCP	0000	0000	1	1	
COL-PWS-4015110	1/17/2019			325.16	8	VCP	0000	0000	1	1	
COL-PWS-4015307	1/17/2019			355.47	8	VCP	0000	0000	1	1	
COL-PWS-4015327	1/17/2019			121.04	8	VCP	0000	0000	1	1	
COL-PWS-4015349	1/17/2019			293.86	8	VCP	0000	2B00	1	2	Deposits attached other - residue on pipe @ 114 ft. - 192 ft.
COL-PWS-4015385	1/17/2019			353.48	8	VCP	1100	0000	1	1	Offset joint @ 106 ft.
COL-PWS-4015412	1/17/2019			294.65	8	VCP	0000	2200	1	2	Deposits attached grease @ 289 ft.
COL-PWS-4015461	1/17/2019			103.05	8	VCP	1100	0000	1	1	Offset joint @ 68 ft.
COL-PWS-4015681	1/17/2019			163.97	8	VCP	0000	0000	1	1	
COL-PWS-4015714	1/17/2019			354.18	8	VCP	0000	0000	1	1	
COL-PWS-4015822	1/17/2019			355.07	8	VCP	1100	0000	1	1	Crack @ 89 ft.
COL-PWS-4016048	1/17/2019			354.18	8	VCP	0000	2800	1	2	Deposits attached other - Appears to be calcium @ 275 ft. - 313 ft.
COL-PWS-2016067	1/18/2019			332.28	8	VCP	0000	0000	1	1	
COL-PWS-2016718	1/18/2019			214.06	8	VCP	0000	0000	1	1	
COL-PWS-2016744	1/18/2019			189.23	8	VCP	0000	0000	1	1	
COL-PWS-4014407	1/18/2019			295.05	8	PVC	0000	0000	1	1	
COL-PWS-4014456	1/18/2019			105.64	8	RPM	0000	0000	1	1	
COL-PWS-4014476	1/18/2019			290.28	8	RPM	0000	0000	1	1	
COL-PWS-4014565	1/18/2019			214.26	8	RPM	0000	0000	1	1	
COL-PWS-4014643	1/18/2019			323.27	8	RPM	0000	0000	1	1	
COL-PWS-4014644	1/18/2019			255.30	8	RPM	0000	0000	1	1	
COL-PWS-4014646	1/18/2019			355.87	8	RPM	0000	0000	1	1	
COL-PWS-4014648	1/18/2019			352.19	8	RPM	0000	0000	1	1	
COL-PWS-4014724	1/18/2019			258.68	8	RPM	0000	0000	1	1	
COL-PWS-4014761	1/18/2019			354.28	8	RPM	0000	0000	1	1	
COL-PWS-4014819	1/18/2019			358.75	8	RPM	0000	0000	1	1	
COL-PWS-4015021	1/18/2019			348.32	8	RPM	0000	0000	1	1	
COL-PWS-4020593	1/18/2019			374.45	8	RPM	0000	0000	1	1	
COL-PWS-4014818	1/18/2019			353.88	8	RPM	2100	4100	2	4	Crack @ 61 ft. Medium roots @ 65 ft.
COL-PWS-4014602	1/18/2019			363.32	8	RPM	2100	0000	2	1	Crack @ 122 ft.
COL-PWS-4014598	1/18/2019			71.15	8	RPM	0000	3121	1	3	Obstacle rocks under the flow @ 71 ft. Deposits attached grease - 10 % @ 71 ft.
COL-PWS-2016912	1/18/2019			236.00	8	VCP	0000	3100	1	3	Medium roots in connection @ 18 ft.
COL-PWS-2016757	1/18/2019			188.19	8	VCP	0000	0000	1	1	
COL-PWS-2016960	1/18/2019			266.28	8	VCP	0000	0000	1	1	
COL-PWS-2017094	1/18/2019			349.62	8	VCP	0000	0000	1	1	
COL-PWS-4014333	1/22/2019			193.09	8	RPM	3100	0000	3	1	Multiple cracks @ 104 ft.
COL-PWS-2017449	1/22/2019			176.88	8	VCP	0000	3100	1	3	Medium roots in lateral @ 28 ft.
COL-PWS-2016003	1/22/2019			106.18	8	VCP	0000	0000	1	1	
COL-PWS-2016224	1/22/2019			268.05	8	PVC	0000	0000	1	1	
COL-PWS-2016479	1/22/2019			99.75	8	VCP	0000	0000	1	1	
COL-PWS-2017914	1/22/2019			100.82	8	PVC	0000	0000	1	1	
COL-PWS-4014297	1/22/2019			162.98	8	RPM	0000	0000	1	1	
COL-PWS-4014660	1/22/2019			230.45	8	RPM	0000	0000	1	1	
COL-PWS-4014792	1/22/2019			421.26	8	RPM	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-2000006	1/22/2019			189.16	8	VCP	0000	0000	1	1	
COL-PWS-2016541	1/22/2019			146.75	8	VCP	0000	0000	1	1	
COL-PWS-2016624	1/22/2019			201.84	8	VCP	0000	0000	1	1	
COL-PWS-2016758	1/22/2019			178.83	8	VCP	0000	0000	1	1	
COL-PWS-2017048	1/22/2019			352.00	8	VCP	0000	2200	1	2	Obstacles pipe material @ 28 ft.
COL-PWS-2017306	1/22/2019			350.63	8	VCP	0000	0000	1	1	
COL-PWS-2017573	1/22/2019			250.40	8	VCP	0000	0000	1	1	
COL-PWS-2017756	1/22/2019			300.03	8	VCP	0000	0000	1	1	
COL-PWS-4014186	1/22/2019			174.60	8	RPM	0000	0000	1	1	
COL-PWS-4014250	1/22/2019			371.27	8	RPM	0000	0000	1	1	
COL-PWS-4014258	1/22/2019			157.91	8	RPM	0000	0000	1	1	
COL-PWS-4014259	1/22/2019			340.07	8	RPM	0000	0000	1	1	
COL-PWS-4014262	1/22/2019			188.12	8	RPM	0000	0000	1	1	
COL-PWS-4014268	1/22/2019			230.16	8	RPM	0000	0000	1	1	
COL-PWS-4014360	1/22/2019			333.11	8	RPM	1200	0000	1	1	Offset joint @ 306 ft.
COL-PWS-4014396	1/22/2019			202.93	8	RPM	0000	0000	1	1	
COL-PWS-4014413	1/22/2019			317.91	8	RPM	0000	0000	1	1	
COL-PWS-4014467	1/22/2019			179.57	8	RPM	0000	0000	1	1	
COL-PWS-4014490	1/22/2019			165.06	8	RPM	0000	0000	1	1	
COL-PWS-4014500	1/22/2019			278.95	8	RPM	0000	0000	1	1	
COL-PWS-4014230	1/22/2019			383.79	8	RPM	2A00	0000	2	1	Water level, sag in pipe - 25% @ 16 ft. - 73 ft.
COL-PWS-2017332	1/22/2019			71.96	8	VCP	0000	0000	1	1	
COL-PWS-2017449	1/22/2019			3.02	8	VCP	0000	0000	1	1	
COL-PWS-2017914	1/22/2019			287.06	8	PVC	0000	0000	1	1	
COL-PWS-4014297	1/22/2019			166.36	8	RPM	0000	0000	1	1	
COL-PWS-2000347	1/23/2019			348.78	8	VCP	0000	4132	1	4	Roots @ 45 ft., 67 ft., 144 ft., 146 ft., 238 ft. & 269 ft.
COL-PWS-2000318	1/23/2019			233.72	8	VCP	0000	413A	1	4	Medium roots throughout pipe.
COL-PWS-2000614	1/23/2019			334.35	8	VCP	0000	3211	1	3	
COL-PWS-2000454	1/23/2019			129.98	8	VCP	0000	5100	1	5	Obstacles pipe material - broken pipe in channel.
COL-PWS-4012708	1/23/2019			299.92	8	VCP	0000	312D	1	3	Deposits attached other - white coating on pipe from 271 ft. - 299 ft.
COL-PWS-4013621	1/23/2019			70.95	8	VCP	0000	3100	1	3	Obstacles other - debris under water flow.
COL-PWS-2000136	1/23/2019			155.13	8	VCP	0000	3212	1	3	Roots @ joint @ 14 ft., 98 ft., 112 ft. & 122 ft.
COL-PWS-2000289	1/23/2019			351.51	8	VCP	0000	3300	1	3	Medium roots at joint @ 64 ft., 143 ft. & 173 ft.
COL-PWS-2000353	1/23/2019			219.39	8	VCP	0000	3100	1	3	Roots @ 99 ft.
COL-PWS-2000114	1/23/2019			53.24	8	VCP	0000	0000	1	1	
COL-PWS-2000128	1/23/2019			136.90	8	VCP	0000	1200	1	1	Fine roots @ 35 ft. & 80 ft.
COL-PWS-2000350	1/23/2019			199.79	8	VCP	0000	0000	1	1	
COL-PWS-2000355	1/23/2019			152.50	8	VCP	0000	0000	1	1	
COL-PWS-2000501	1/23/2019			263.95	8	VCP	0000	1100	1	1	Fine roots @ 57 ft.
COL-PWS-2000533	1/23/2019			141.09	8	VCP	0000	0000	1	1	
COL-PWS-2000668	1/23/2019			257.51	8	VCP	0000	0000	1	1	
COL-PWS-2000675	1/23/2019			151.23	8	VCP	0000	0000	1	1	
COL-PWS-2000762	1/23/2019			286.86	8	VCP	0000	0000	1	1	
COL-PWS-2000823	1/23/2019			250.49	8	VCP	0000	0000	1	1	
COL-PWS-4012793	1/23/2019			354.38	8	VCP	0000	2C00	1	2	Deposits attached other - white coating on pipe from 0 ft. - 89 ft.
COL-PWS-4012794	1/23/2019			90.33	8	VCP	0000	0000	1	1	
COL-PWS-4012847	1/23/2019			317.01	8	VCP	1100	2H00	1	2	Deposits attached other - white coating on pipe from 3 ft. - 229 ft. Medium offset joint @ 313 ft.
COL-PWS-4012997	1/23/2019			323.07	8	VCP	0000	0000	1	1	
COL-PWS-4013011	1/23/2019			151.55	8	VCP	0000	0000	1	1	
COL-PWS-4013043	1/23/2019			354.48	8	RPM	0000	0000	1	1	
COL-PWS-4013112	1/23/2019			200.44	8	VCP	0000	0000	1	1	
COL-PWS-4013131	1/23/2019			99.08	8	VCP	0000	0000	1	1	
COL-PWS-4013144	1/23/2019			378.03	8	VCP	0000	2100	1	2	Deposits attached other - white coating on pipe @ 156 ft.
COL-PWS-4013153	1/23/2019			79.20	8	VCP	0000	0000	1	1	
COL-PWS-4013190	1/23/2019			396.12	8	VCP	0000	0000	1	1	
COL-PWS-4013198	1/23/2019			343.74	8	VCP	0000	0000	1	1	

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COL-PWS-4013292	1/23/2019			354.97	8	VCP	0000	0000	1	1	
COL-PWS-4013358	1/23/2019			345.73	8	VCP	0000	0000	1	1	
COL-PWS-4013447	1/23/2019			355.47	8	VCP	0000	2G00	1	2	Deposits attached other - white coating in pipe from 49 ft. - 260 ft.
COL-PWS-4013520	1/23/2019			350.00	8	VCP	0000	0000	1	1	
COL-PWS-4013119	1/23/2019			179.67	8	VCP	2400	0000	2	1	Water level - sag in pipe - @ 150 ft. - 30%.
COL-PWS-2000347	1/23/2019			101.80	8	VCP	0000	3600	1	3	Roots @ 29 ft., 52 ft., 61 ft., 67 ft., 71 ft., 87 ft. & 94 ft.
COL-PWS-4013672	1/24/2019			308.17	8	RPM	0000	2J00	1	2	Deposits attached grease - 5% - @ 26 ft. - 308 ft.
COL-PWS-4013674	1/24/2019			310.65	8	RPM	0000	2K00	1	2	Deposits attached grease - 5% - @ 0 ft. - 310 ft.
COL-PWS-4013677	1/24/2019			259.97	8	RPM	0000	492T	1	4	Deposits attached grease - 5% - @ 0 ft. - 259 ft.
COL-PWS-4013689	1/24/2019			143.80	8	RPM	0000	2E00	1	2	Deposits attached grease - 5% - @ 0 ft. - 143 Ft.
COL-PWS-2017092	1/24/2019			324.50	8	PVC	0000	2100	1	2	Deposits attached encrustation @ 45 ft. - 52 ft.
COL-PWS-2016482	1/24/2019			272.73	8	PVC	0000	2300	1	2	Deposits attached encrustation @ 12 ft. - 145 ft.
COL-PWS-2016491	1/24/2019			277.21	8	PVC	0000	0000	1	1	
COL-PWS-2016501	1/24/2019			278.09	8	PVC	0000	0000	1	1	
COL-PWS-2016588	1/24/2019			197.35	8	PVC	0000	0000	1	1	
COL-PWS-2016685	1/24/2019			295.15	8	PVC	0000	0000	1	1	
COL-PWS-2016739	1/24/2019			206.81	8	PVC	0000	0000	1	1	
COL-PWS-2016846	1/24/2019			231.97	8	PVC	0000	0000	1	1	
COL-PWS-2016870	1/24/2019			315.34	8	PVC	0000	2200	1	2	Deposits settled fine - 6 ft. - 16 ft.
COL-PWS-2016925	1/24/2019			140.70	8	PVC	0000	0000	1	1	
COL-PWS-2017036	1/24/2019			133.10	8	PVC	0000	0000	1	1	
COL-PWS-4013218	1/24/2019			146.28	8	RPM	0000	0000	1	1	
COL-PWS-4013281	1/24/2019			355.27	8	RPM	0000	0000	1	1	
COL-PWS-4013322	1/24/2019			375.54	8	RPM	0000	0000	1	1	
COL-PWS-4013439	1/24/2019			133.86	8	RPM	0000	0000	1	1	
COL-PWS-4013504	1/24/2019			330.73	8	RPM	0000	0000	1	1	
COL-PWS-4013505	1/24/2019			297.93	8	RPM	0000	0000	1	1	
COL-PWS-4013540	1/24/2019			284.81	8	RPM	0000	0000	1	1	
COL-PWS-4013671	1/24/2019			298.92	8	RPM	0000	0000	1	1	
COL-PWS-4020669	1/24/2019			370.67	8	RPM	0000	0000	1	1	
COL-PWS-4012970	1/25/2019			153.04	8	VCP	0000	2E00	1	2	Deposits attached grease - 5% - @ 4 Ft. - 153 Ft.
COL-PWS-4012882	1/25/2019			170.83	8	RPM	0000	4100	1	4	Obstacles construction debris - 30% - concrete in channel @ 170 ft.
COL-PWS-4012342	1/25/2019			183.05	8	RPM	0000	0000	1	1	
COL-PWS-4012443	1/25/2019			150.36	8	RPM	0000	0000	1	1	
COL-PWS-4012482	1/25/2019			275.67	8	RPM	0000	0000	1	1	
COL-PWS-4012484	1/25/2019			286.70	8	VCP	0000	2400	1	2	Deposits attached other - white coating on pipe from 176 Ft.. - 198 Ft.
COL-PWS-4012502	1/25/2019			198.16	8	RPM	0000	0000	1	1	
COL-PWS-4012555	1/25/2019			214.55	8	RPM	0000	0000	1	1	
COL-PWS-4012595	1/25/2019			132.47	8	VCP	0000	0000	1	1	
COL-PWS-4012628	1/25/2019			268.22	8	VCP	0000	2G00	1	2	Deposits attached other - white coating on pipe from 64 Ft. - 268 Ft..
COL-PWS-4012664	1/25/2019			98.38	8	RPM	0000	0000	1	1	
COL-PWS-4012713	1/25/2019			305.09	8	RPM	1100	0000	1	1	Medium offset joint @ 68 ft.
COL-PWS-4012717	1/25/2019			313.83	8	RPM	1300	1100	1	1	Medium offset joint @ 156 ft., 169 ft. & 256 ft. Fine roots at joint @ 258 ft.
COL-PWS-4012719	1/25/2019			355.67	8	RPM	0000	0000	1	1	
COL-PWS-4012885	1/25/2019			233.24	8	RPM	0000	0000	1	1	
COL-PWS-4012943	1/25/2019			213.16	8	VCP	0000	0000	1	1	
COL-PWS-4012950	1/25/2019			141.31	8	VCP	0000	0000	1	1	
COL-PWS-4013431	1/25/2019			348.41	8	RPM	0000	0000	1	1	
COL-PWS-4013485	1/25/2019			256.29	8	RPM	0000	0000	1	1	
COL-PWS-4013604	1/25/2019			123.13	8	RPM	0000	0000	1	1	
COL-PWS-4013605	1/25/2019			125.21	8	RPM	0000	0000	1	1	
COL-PWS-4012525	1/25/2019			202.13	8	RPM	2B00	0000	2	1	Water level - sag in pipe - 20% - 88 ft - 114 ft & 133 ft. - 185 ft.
COL-PWS-2017072	1/28/2019			130.01	8	PVC	0000	3100	1	3	Deposits settled fine - sand in channel @ 127 ft.
COL-PWS-2016962	1/28/2019			333.03	8	PVC	0000	0000	1	1	

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COL-PWS-2016963	1/28/2019			323.02	8	PVC	0000	0000	1	1	
COL-PWS-2016965	1/28/2019			382.06	8	PVC	0000	0000	1	1	
COL-PWS-2016983	1/28/2019			214.02	8	PVC	0000	0000	1	1	
COL-PWS-2016990	1/28/2019			283.16	8	PVC	0000	0000	1	1	
COL-PWS-2017088	1/28/2019			166.97	8	PVC	0000	0000	1	1	
COL-PWS-2017165	1/28/2019			141.08	8	PVC	0000	0000	1	1	
COL-PWS-2017172	1/28/2019			47.08	8	PVC	0000	0000	1	1	
COL-PWS-2017217	1/28/2019			127.83	8	PVC	0000	0000	1	1	
COL-PWS-2017268	1/28/2019			261.32	8	RPM	0000	0000	1	1	
COL-PWS-2017356	1/28/2019			113.01	8	RPM	0000	2100	1	2	Deposits settled fine - sand in channel @ 106 ft.
COL-PWS-2017361	1/28/2019			148.07	8	RPM	0000	0000	1	1	
COL-PWS-2017373	1/28/2019			169.06	8	RPM	0000	0000	1	1	
COL-PWS-2017423	1/28/2019			181.11	8	RPM	0000	0000	1	1	
COL-PWS-2017479	1/28/2019			226.71	8	RPM	0000	2100	1	2	Deposits settled fine - sand in channel @ 222 ft.
COL-PWS-2017563	1/28/2019			244.09	8	RPM	0000	0000	1	1	
COL-PWS-2017569	1/28/2019			277.05	8	RPM	0000	0000	1	1	
COL-PWS-2017650	1/28/2019			310.12	8	RPM	0000	0000	1	1	
COL-PWS-2017689	1/28/2019			285.03	8	RPM	0000	0000	1	1	
COL-PWS-2017781	1/28/2019			288.30	8	RPM	0000	0000	1	1	
COL-PWS-4013514	1/28/2019			303.10	8	RPM	0000	0000	1	1	
COL-PWS-4013670	1/28/2019			154.33	8	RPM	0000	0000	1	1	
COL-PWS-4013679	1/28/2019			209.09	8	VCP	0000	0000	1	1	
COL-PWS-4013683	1/28/2019			380.61	8	VCP	0000	0000	1	1	
COL-PWS-4013746	1/28/2019			377.43	8	VCP	0000	2100	1	2	Obstacles rocks @ 117 ft.
COL-PWS-4013755	1/28/2019			179.87	8	RPM	0000	0000	1	1	
COL-PWS-4013823	1/28/2019			330.33	8	VCP	0000	1300	1	1	Fine roots @ 5 ft., 18 ft. & 23 ft.
COL-PWS-4013857	1/28/2019			195.77	8	RPM	0000	0000	1	1	
COL-PWS-4013925	1/28/2019			211.97	8	VCP	0000	1500	1	1	Fine roots @ 28 ft., 65 ft., 142 ft., 170 ft., & 177 ft.
COL-PWS-4013957	1/28/2019			35.68	8	VCP	0000	0000	1	1	
COL-PWS-4013961	1/28/2019			329.73	8	RPM	0000	0000	1	1	
COL-PWS-4013963	1/28/2019			166.26	8	VCP	0000	0000	1	1	
COL-PWS-4013992	1/28/2019			287.10	8	VCP	0000	0000	1	1	
COL-PWS-4014024	1/28/2019			355.97	8	RPM	0000	0000	1	1	
COL-PWS-2017092	1/28/2019			156.00	8	RPM	0000	0000	1	1	
COL-PWS-2017224	1/29/2019			276.58	8	RPM	0000	3100	1	3	Deposits attached encrustation @ 276 ft.
COL-PWS-2016973	1/29/2019			216.46	8	RPM	0000	0000	1	1	
COL-PWS-2017136	1/29/2019			276.11	8	RPM	0000	0000	1	1	
COL-PWS-2017145	1/29/2019			161.09	8	RPM	0000	0000	1	1	
COL-PWS-2017158	1/29/2019			266.29	8	RPM	0000	0000	1	1	
COL-PWS-2017185	1/29/2019			125.26	8	RPM	0000	0000	1	1	
COL-PWS-2017244	1/29/2019			217.85	8	RPM	0000	0000	1	1	
COL-PWS-2017266	1/29/2019			174.01	8	RPM	0000	0000	1	1	
COL-PWS-2017267	1/29/2019			241.72	8	RPM	0000	2200	1	2	Deposits attached encrustation @ 240 ft.
COL-PWS-2017287	1/29/2019			291.61	8	RPM	0000	0000	1	1	
COL-PWS-2017343	1/29/2019			294.07	8	RPM	0000	0000	1	1	
COL-PWS-2017346	1/29/2019			222.02	8	RPM	0000	0000	1	1	
COL-PWS-2017402	1/29/2019			154.00	8	RPM	0000	0000	1	1	
COL-PWS-2017403	1/29/2019			310.20	8	RPM	0000	0000	1	1	
COL-PWS-2017474	1/29/2019			227.19	8	RPM	0000	0000	1	1	
COL-PWS-2017478	1/29/2019			232.79	8	RPM	0000	0000	1	1	
COL-PWS-2017609	1/29/2019			232.30	8	RPM	0000	0000	1	1	
COL-PWS-2017759	1/29/2019			350.24	8	RPM	0000	0000	1	1	
COL-PWS-2017786	1/29/2019			315.01	8	RPM	0000	0000	1	1	
COL-PWS-2017810	1/29/2019			311.07	8	RPM	0000	0000	1	1	
COL-PWS-2017853	1/29/2019			249.23	8	RPM	0000	0000	1	1	
COL-PWS-2020449	1/29/2019			162.58	8	RPM	0000	0000	1	1	
COL-PWS-4012812	1/29/2019			320.39	8	RPM	0000	0000	1	1	
COL-PWS-4012958	1/29/2019			232.14	8	RPM	0000	0000	1	1	
COL-PWS-4012961	1/30/2019			356.86	8	RPM	0000	0000	1	1	
COL-PWS-4012962	1/30/2019			345.14	8	RPM	0000	0000	1	1	

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COL-PWS-2000638	1/31/2019			234.76	18	VCP	0000	3100	1	3	Obstacles rocks - rocks in pipe - 20% of pipe - @ 234 ft.
COL-PWS-2001159	1/31/2019			137.40	18	VCP	0000	5131	1	5	Root ball - 90% of pipe - @ 137 ft. Needs to be re-cleaned. Medium roots @ 46 ft.
COL-PWS-2001280	1/31/2019			95.16	18	VCP	0000	4132	1	4	Medium roots @ 11 ft. & 22 ft. Root ball - 55% of pipe - @ 94 ft
COL-PWS-2001318	1/31/2019			176.68	18	VCP	0000	3100	1	3	Medium roots in lateral @ 25 ft.
COL-PWS-2000936	1/31/2019			379.22	18	VCP	1100	3600	1	3	Crack @ 59 ft. Deposits settled fine - @ 89 ft. Roots @ 43 ft., 227 ft., 230 ft., 281 ft. & 299 ft.
COL-PWS-4012185	1/31/2019			328.44	8	RPM	0000	0000	1	1	
COL-PWS-4012811	1/31/2019			426.03	8	RPM	0000	0000	1	1	
COL-PWS-4013267	1/31/2019			305.88	8	RPM	0000	0000	1	1	
COL-PWS-2000174	1/31/2019			299.27	8	RPM	0000	0000	1	1	
COL-PWS-2000175	1/31/2019			0.00	18	VCP	0000	0000	1	1	
COL-PWS-2000309	1/31/2019			219.08	18	VCP	0000	0000	1	1	
COL-PWS-2000461	1/31/2019			145.52	18	VCP	0000	0000	1	1	
COL-PWS-2000551	1/31/2019			152.21	18	VCP	0000	0000	1	1	
COL-PWS-2000831	1/31/2019			153.74	18	VCP	0000	0000	1	1	
COL-PWS-2000895	1/31/2019			76.32	18	VCP	0000	0000	1	1	
COL-PWS-2016943	1/31/2019			259.15	8	RPM	0000	0000	1	1	
COL-PWS-2016977	1/31/2019			359.18	8	RPM	0000	0000	1	1	
COL-PWS-2017495	1/31/2019			133.11	8	RPM	0000	0000	1	1	
COL-PWS-2017586	1/31/2019			183.73	8	RPM	0000	0000	1	1	
COL-PWS-2017629	1/31/2019			274.21	8	RPM	0000	0000	1	1	
COL-PWS-2017676	1/31/2019			140.00	8	RPM	0000	0000	1	1	
COL-PWS-2017707	1/31/2019			149.49	8	RPM	0000	0000	1	1	
COL-PWS-4012813	1/31/2019			354.08	8	RPM	0000	0000	1	1	
COL-PWS-4012957	1/31/2019			350.50	8	RPM	0000	0000	1	1	
COL-PWS-4013077	1/31/2019			256.89	8	RPM	0000	0000	1	1	
COL-PWS-4013126	1/31/2019			355.67	8	RPM	0000	0000	1	1	
COL-PWS-4013152	1/31/2019			138.83	8	RPM	0000	0000	1	1	
COL-PWS-4013169	1/31/2019			222.40	8	RPM	0000	0000	1	1	
COL-PWS-4013209	1/31/2019			340.66	8	RPM	0000	0000	1	1	
COL-PWS-4013314	1/31/2019			353.18	8	RPM	0000	0000	1	1	
COL-PWS-4013344	1/31/2019			150.06	8	RPM	0000	0000	1	1	
COL-PWS-4013401	1/31/2019			227.67	8	RPM	0000	0000	1	1	
COL-PWS-4013402	1/31/2019			316.32	8	RPM	0000	0000	1	1	
COL-PWS-4013444	1/31/2019			201.64	8	RPM	0000	0000	1	1	
COL-PWS-4013528	1/31/2019			243.27	8	RPM	0000	0000	1	1	
COL-PWS-2000120	1/31/2019			169.73	8	RPM	2100	5100	2	5	Deposits settled gravel - Gravel in in pipe - 100 % of pipe - @ 169 ft. Large offset joint @ 69 ft.
COL-PWS-2000638	1/31/2019			68.11	18	VCP	0000	3100	1	3	Obstacles rocks - rocks in pipe - 20% of pipe - @ 65 ft.
COL-PWS-2001318	1/31/2019			5.23	18	VCP	0000	3100	1	3	Deposits settled other - Debris underwater - @ 4 ft.
COL-PWS-2001280	1/31/2019			110.75	18	VCP	0000	3500	1	3	Medium roots @ 5 ft., 37 ft., 48 ft., 63 ft. & 109 ft.
COL-PWS-2000476	1/31/2019			146.00	8	RPM	1100	0000	1	1	Medium separated joint @ 145 ft.
COL-PWS-2001159	1/31/2019			51.58	18	VCP	0000	0000	1	1	
COL-PWS-4013267	1/31/2019			330.63	8	RPM	0000	0000	1	1	
COL-PWS-2002805	2/1/2019			254.59	8	VCP	0000	3111	1	3	Medium roots at joint @ 93 ft. Fine roots at joint @ 124 ft.
COL-PWS-2020284	2/1/2019			209.35	8	VCP	0000	0000	1	1	
0	2/1/2019			82.98	8	VCP	0000	0000	1	1	
COL-PWS-2003400	2/1/2019			159.23	8	PVC	0000	0000	1	1	
COL-PWS-2003419	2/1/2019			100.14	8	PVC	0000	0000	1	1	
COL-PWS-2003643	2/1/2019			81.32	8	PVC	0000	0000	1	1	
COL-PWS-4001523	2/1/2019			301.07	8	RPM	0000	0000	1	1	
COL-PWS-4001631	2/1/2019			308.01	8	RPM	0000	0000	1	1	
COL-PWS-4001845	2/1/2019			300.10	8	RPM	0000	0000	1	1	
COL-PWS-4002060	2/1/2019			221.01	8	RPM	0000	0000	1	1	
COL-PWS-4003325	2/1/2019			215.02	8	RPM	0000	0000	1	1	
COL-PWS-4003759	2/1/2019			248.03	8	RPM	0000	0000	1	1	
COL-PWS-4004305	2/1/2019			330.10	8	RPM	0000	0000	1	1	

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COL-PWS-4005612	2/1/2019			236.50	8	RPM	0000	0000	1	1	
COL-PWS-4006246	2/1/2019			350.24	8	RPM	0000	0000	1	1	
COL-PWS-4013067	2/1/2019			206.31	8	VCP	0000	0000	1	1	
COL-PWS-4013121	2/1/2019			205.21	8	VCP	0000	0000	1	1	
COL-PWS-4013150	2/1/2019			50.78	8	VCP	0000	0000	1	1	
COL-PWS-4013254	2/1/2019			218.93	8	RPM	0000	0000	1	1	
COL-PWS-4013293	2/1/2019			355.67	8	VCP	0000	0000	1	1	
COL-PWS-4013338	2/1/2019			222.80	8	RPM	0000	0000	1	1	
COL-PWS-4013430	2/1/2019			379.82	8	VCP	0000	0000	1	1	
COL-PWS-4013464	2/1/2019			284.22	8	RPM	0000	0000	1	1	
COL-PWS-4013527	2/1/2019			282.13	8	RPM	0000	0000	1	1	
COL-PWS-4013590	2/1/2019			351.79	8	VCP	0000	0000	1	1	
COL-PWS-401378	2/1/2019			311.65	12	VCP	0000	0000	1	1	
COL-PWS-4013849	2/1/2019			354.77	8	RPM	0000	0000	1	1	
COL-PWS-4013868	2/1/2019			165.86	8	RPM	0000	0000	1	1	
COL-PWS-4013875	2/1/2019			209.59	8	RPM	0000	0000	1	1	
COL-PWS-4013939	2/1/2019			352.59	8	RPM	0000	0000	1	1	
COL-PWS-4013974	2/1/2019			193.09	8	RPM	0000	0000	1	1	
COL-PWS-4014112	2/1/2019			422.08	8	RPM	0000	0000	1	1	
COL-PWS-4014139	2/1/2019			178.58	8	RPM	0000	0000	1	1	
COL-PWS-4014223	2/1/2019			341.63	8	RPM	0000	0000	1	1	
COL-PWS-4014331	2/1/2019			313.02	8	RPM	0000	0000	1	1	
COL-PWS-4015969	2/1/2019			196.03	8	RPM	0000	0000	1	1	
COL-PWS-4016076	2/1/2019			364.15	8	RPM	0000	0000	1	1	
COL-PWS-4016187	2/1/2019			378.09	8	RPM	0000	0000	1	1	
COL-PWS-4016842	2/1/2019			251.03	8	RPM	0000	0000	1	1	
COL-PWS-4013162	2/1/2019			15.60	10	VCP	2100	3100	2	3	Obstacles rocks - 15% - @ 15 ft.
COL-PWS-4007805	2/1/2019			284.02	8	RPM	2A00	0000	2	1	Water level - sag in pipe - 25% - @ 99 ft. - 148 ft.
COL-PWS-2002650	2/1/2019			150.94	8	VCP	5100	0000	5	1	Broken pipe @ 60 ft.
COL-PWS-2002643	2/1/2019			200.77	8	VCP	1100	0000	1	1	Medium offset joint @ 195 ft.
COL-PWS-2002715	2/1/2019			189.85	8	VCP	0000	0000	1	1	
COL-PWS-2002775	2/1/2019			227.19	8	VCP	1100	0000	1	1	Medium offset joint @ 211 ft.
COL-PWS-2002809	2/1/2019			216.46	8	VCP	0000	0000	1	1	
COL-PWS-2002850	2/1/2019			239.96	8	VCP	0000	1100	1	1	Vermin - Cockroach.
COL-PWS-2002860	2/1/2019			235.09	8	VCP	0000	0000	1	1	
COL-PWS-2002958	2/1/2019			314.56	8	VCP	0000	0000	1	1	
COL-PWS-2003384	2/1/2019			167.32	8	PVC	0000	0000	1	1	
COL-PWS-2003420	2/1/2019			115.84	8	PVC	0000	0000	1	1	
COL-PWS-2003431	2/1/2019			233.24	8	PVC	0000	0000	1	1	
COL-PWS-2003445	2/1/2019			86.29	8	PVC	0000	0000	1	1	
COL-PWS-20034468	2/1/2019			115.16	8	PVC	0000	0000	1	1	
COL-PWS-2003468	2/1/2019			80.54	8	PVC	0000	0000	1	1	
COL-PWS-2003514	2/1/2019			119.06	8	PVC	0000	0000	1	1	
COL-PWS-2003603	2/1/2019			273.41	8	PVC	0000	0000	1	1	
COL-PWS-2003603	2/1/2019			30.23	8	PVC	0000	2100	1	2	Obstacles other - 5% - Possible rebar in pipe.
COL-PWS-2020284	2/1/2019			74.01	8	VCP	0000	0000	1	1	
COL-PWS-4001739	2/4/2019			328.85	8	VCP	0000	3100	1	3	Deposits attached grease - 20% - @ 310 ft.
COL-PWS-4002785	2/4/2019			281.52	8	RPM	0000	5100	1	5	Deposits attached grease - 35% - @ 280 ft.
COL-PWS-4016731	2/4/2019			435.39	8	VCP	0000	3123	1	3	Deposits attached grease - 15% - @ 16 ft., 100 ft. & 117 ft.
COL-PWS-4002677	2/4/2019			98.22	8	RPM	0000	3100	1	3	Deposits settled compacted 155 - @ 98 ft.
COL-PWS-4014585	2/4/2019			11.63	8	VCP	0000	0000	1	1	
COL-PWS-4000216	2/4/2019			276.00	8	RPM	0000	0000	1	1	
COL-PWS-4001192	2/4/2019			283.62	8	RPM	0000	0000	1	1	
COL-PWS-4002572	2/4/2019			275.03	8	RPM	0000	0000	1	1	
COL-PWS-4004412	2/4/2019			294.53	8	VCP	0000	0000	1	1	
COL-PWS-4004852	2/4/2019			258.03	8	RPM	0000	0000	1	1	
COL-PWS-4005181	2/4/2019			279.13	8	RPM	0000	2100	1	2	Deposits settled fine 10 % - @ 271 ft.
COL-PWS-4007115	2/4/2019			324.03	8	VCP	0000	0000	1	1	
COL-PWS-4007226	2/4/2019			195.02	8	VCP	0000	0000	1	1	

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COL-PWS-4009797	2/4/2019			343.22	8	VCP	0000	0000	1	1	
COL-PWS-4009959	2/4/2019			393.45	8	VCP	0000	0000	1	1	
COL-PWS-4010077	2/4/2019			427.01	8	VCP	0000	0000	1	1	
COL-PWS-4010085	2/4/2019			398.13	8	VCP	0000	0000	1	1	
COL-PWS-4013161	2/4/2019			144.59	8	RPM	0000	0000	1	1	
COL-PWS-4013356	2/4/2019			139.03	8	VCP	0000	0000	1	1	
COL-PWS-4013371	2/4/2019			356.27	8	RPM	0000	0000	1	1	
COL-PWS-4013421	2/4/2019			276.27	8	VCP	0000	0000	1	1	
COL-PWS-4013657	2/4/2019			355.07	8	RPM	0000	0000	1	1	
COL-PWS-4014075	2/4/2019			254.80	8	RPM	0000	0000	1	1	
COL-PWS-4014187	2/4/2019			294.15	8	RPM	0000	0000	1	1	
COL-PWS-4014197	2/4/2019			366.60	8	VCP	1300	2100	1	2	Cracks @ 156 ft., 241 ft. & 361 ft. Root tap at joint @ 241 ft.
COL-PWS-4014279	2/4/2019			224.29	8	VCP	0000	0000	1	1	
COL-PWS-4014304	2/4/2019			321.58	12	VCP	0000	0000	1	1	
COL-PWS-4014316	2/4/2019			243.67	8	VCP	0000	0000	1	1	
COL-PWS-4014368	2/4/2019			354.58	8	VCP	0000	0000	1	1	
COL-PWS-4014391	2/4/2019			217.83	12	VCP	0000	0000	1	1	
COL-PWS-4014395	2/4/2019			227.08	8	VCP	1100	0000	1	1	Crack @ 162 ft.
COL-PWS-4014425	2/4/2019			125.31	12	VCP	0000	0000	1	1	
COL-PWS-4014513	2/4/2019			243.77	8	VCP	0000	0000	1	1	
COL-PWS-4014547	2/4/2019			234.03	12	VCP	0000	0000	1	1	
COL-PWS-4014518	2/4/2019			261.76	8	VCP	2100	0000	2	1	Crack @ 46 ft.
COL-PWS-4014585	2/4/2019			266.13	8	VCP	0000	0000	1	1	
COL-PWS-4014748	2/5/2019			118.26	8	PVC	0000	4100	1	4	Alignment left - 25% - @ 70 ft.
COL-PWS-4001413	2/5/2019			308.05	8	RPM	0000	2K00	1	2	Deposits attached grease = 10% - @ 10 ft. & 308 ft.
COL-PWS-4006682	2/5/2019			387.00	8	RPM	0000	3300	1	3	Deposits attached grease - 20 % - @ 373 ft. & 387 ft.
COL-PWS-4014657	2/5/2019			303.08	8	RPM	0000	4100	1	4	Water mark - 50% - @ 295 ft.
COL-PWS-4002895	2/5/2019			358.53	8	RPM	0000	3100	1	3	Deposits settled compacted - 20% - @ 357 ft.
COL-PWS-2003180	2/5/2019			204.96	8	VCP	0000	1100	1	1	Vermin - Cockroach @ 204 ft.
COL-PWS-2003198	2/5/2019			92.26	8	VCP	0000	0000	1	1	
COL-PWS-2003281	2/5/2019			132.57	8	VCP	0000	1100	1	1	Vermin - Cockroach @ 127 ft.
COL-PWS-4014731	2/5/2019			142.41	8	PVC	0000	0000	1	1	
COL-PWS-2020241	2/5/2019			292.33	8	VCP	0000	0000	1	1	
COL-PWS-2020292	2/5/2019			294.68	8	VCP	0000	0000	1	1	
COL-PWS-4000004	2/5/2019			400.06	8	RPM	0000	0000	1	1	
COL-PWS-4000870	2/5/2019			315.11	8	RPM	0000	2100	1	2	Deposits attached grease - 10 % - @ 300 ft.
COL-PWS-4001088	2/5/2019			312.53	8	RPM	0000	0000	1	1	
COL-PWS-4005820	2/5/2019			109.11	8	VCP	0000	0000	1	1	
COL-PWS-4005929	2/5/2019			319.09	8	VCP	1100	0000	1	1	Medium offset joint @ 26 ft.
COL-PWS-4006139	2/5/2019			191.19	8	RPM	0000	0000	1	1	
COL-PWS-4006899	2/5/2019			190.60	8	VCP	0000	0000	1	1	
COL-PWS-4007782	2/5/2019			107.06	8	VCP	0000	0000	1	1	
COL-PWS-4007893	2/5/2019			385.01	8	VCP	1100	0000	1	1	Medium offset joint @ 239 ft.
COL-PWS-4008625	2/5/2019			280.08	8	VCP	0000	0000	1	1	
COL-PWS-4011506	2/5/2019			281.05	8	RPM	0000	0000	1	1	
COL-PWS-4012821	2/5/2019			282.29	8	RPM	0000	0000	1	1	
COL-PWS-4012926	2/5/2019			273.37	8	RPM	0000	0000	1	1	
COL-PWS-4013517	2/5/2019			292.96	8	VCP	0000	0000	1	1	
COL-PWS-4013648	2/5/2019			285.81	10	VCP	0000	0000	1	1	
COL-PWS-4013757	2/5/2019			338.68	8	VCP	0000	0000	1	1	
COL-PWS-4013804	2/5/2019			195.08	8	VCP	0000	0000	1	1	
COL-PWS-4013824	2/5/2019			177.49	8	VCP	0000	0000	1	1	
COL-PWS-4013856	2/5/2019			173.01	8	PVC	0000	0000	1	1	
COL-PWS-4013867	2/5/2019			316.61	8	RPM	0000	0000	1	1	
COL-PWS-4013890	2/5/2019			120.25	8	PVC	0000	0000	1	1	
COL-PWS-4013916	2/5/2019			354.28	8	VCP	0000	0000	1	1	
COL-PWS-4013952	2/5/2019			390.25	8	VCP	0000	0000	1	1	
COL-PWS-4014061	2/5/2019			336.59	8	RPM	0000	0000	1	1	
COL-PWS-4014097	2/5/2019			354.18	8	VCP	0000	0000	1	1	

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COL-PWS-4014178	2/5/2019			383.49	8	VCP	0000	0000	1	1	
COL-PWS-4014806	2/5/2019			168.84	8	PVC	0000	0000	1	1	
COL-PWS-4015640	2/5/2019			312.22	8	RPM	0000	0000	1	1	
COL-PWS-4016952	2/5/2019			393.33	8	RPM	0000	0000	1	1	
COL-PWS-4017615	2/5/2019			378.53	8	RPM	0000	0000	1	1	
COL-PWS-4014664	2/5/2019			181.06	12	VCP	2600	3100	2	3	Water level - sag in pipe - 25% - @ 149 ft. - 181 ft. Obstacles other - 20% - @ 181 ft.
COL-PWS-4014743	2/5/2019			287.30	12	VCP	2B00	3100	2	3	Water level - sag in pipe - 25% - @ 86 ft. - 160 ft. Obstacle other - 15% - @ 235 ft.
COL-PWS-4013938	2/5/2019			179.18	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - @ 77 ft.
COL-PWS-2003030	2/5/2019			295.95	8	VCP	4121	413J	4	4	Large offset joint @ 57 ft. Multiple fractures @ 70 ft. Fine roots at joint @ 11 ft., 21 ft. Medium roots at joint @ 42 ft., 63 ft., 99 ft. & 295 ft. Root ball @ 214 ft.
COL-PWS-2002639	2/5/2019			313.66	8	VCP	3112	2100	3	2	Medium offset joint @ 21 ft. & 106 ft. Spiral fracture @ 133 ft. Tap factory made defective - 10 o'clock - @ 22 ft.
COL-PWS-2002549	2/5/2019			153.11	8	VCP	0000	0000	1	1	
COL-PWS-2002558	2/5/2019			389.77	8	VCP	0000	0000	1	1	
COL-PWS-2002838	2/5/2019			144.50	8	VCP	0000	0000	1	1	
COL-PWS-2002942	2/5/2019			144.50	8	VCP	0000	0000	1	1	
COL-PWS-2002960	2/5/2019			335.28	8	VCP	0000	0000	1	1	
COL-PWS-2002985	2/5/2019			169.45	8	VCP	0000	0000	1	1	
COL-PWS-2002999	2/5/2019			271.10	8	VCP	0000	0000	1	1	
COL-PWS-2003111	2/5/2019			259.16	8	VCP	0000	1100	1	1	Vermin - Cockroach @ 259 ft.
COL-PWS-2003141	2/5/2019			192.64	8	VCP	0000	0000	1	1	
COL-PWS-2003195	2/5/2019			281.76	8	VCP	0000	0000	1	1	
COL-PWS-2003198	2/5/2019			45.88	8	VCP	0000	0000	1	1	
COL-PWS-2003291	2/5/2019			268.46	8	VCP	0000	0000	1	1	
COL-PWS-4014624	2/5/2019			148.67	8	PVC	0000	0000	1	1	
COL-PWS-4003542	2/6/2019			343.31	8	RPM	4A00	5141	4	5	Deposits attached grease - 35% - @ 124 ft. Deposits attached grease - 20% - @ 22 ft. & 76 ft.
COL-PWS-4003974	2/6/2019			246.16	8	RPM	4B00	413A	4	4	Water level - sag in pipe - 100% - 2 58 ft. - 125 ft. Deposits attached grease - 20% - @ 21 ft. & 78 ft.
COL-PWS-2001873	2/6/2019			196.55	8	VCP	0000	4132	1	4	Deposits attached encrustation - 10% - @ 14 ft. & 196 ft. Medium rots @ 54 ft., 154 ft. & 159 ft.
COL-PWS-2001947	2/6/2019			226.88	8	VCP	0000	3111	1	3	Medium roots @ 186 t. Fine roots @ 192 ft.
COL-PWS-2002187	2/6/2019			288.71	8	VCP	0000	4131	1	4	Medium roots @ 93 ft., 99 ft. & 108 ft.
COL-PWS-2001588	2/6/2019			302.80	8	VCP	0000	2A00	1	2	Deposits attached encrustation - 10% - @ 12 ft. & 71 ft.
COL-PWS-2002184	2/6/2019			207.61	8	VCP	0000	0000	1	1	
COL-PWS-2001581	2/6/2019			169.45	8	VCP	0000	0000	1	1	
COL-PWS-2001607	2/6/2019			150.37	8	VCP	0000	2612	1	2	Fine roots @ 77 ft. Deposits attached grease - 10% - @ 120 ft. & 150 ft.
COL-PWS-2002042	2/6/2019			79.05	8	VCP	0000	0000	1	1	
COL-PWS-4000323	2/6/2019			280.60	8	RPM	0000	0000	1	1	
COL-PWS-4000543	2/6/2019			282.00	8	RPM	0000	0000	1	1	
COL-PWS-4001956	2/6/2019			280.18	8	RPM	0000	0000	1	1	
COL-PWS-4002463	2/6/2019			276.05	8	RPM	0000	0000	1	1	
COL-PWS-4011835	2/6/2019			303.52	8	VCP	0000	0000	1	1	
COL-PWS-4011946	2/6/2019			259.03	8	RPM	0000	0000	1	1	
COL-PWS-4013146	2/6/2019			278.12	8	VCP	0000	0000	1	1	
COL-PWS-4014766	2/6/2019			400.21	8	RPM	0000	0000	1	1	
COL-PWS-4014875	2/6/2019			243.35	8	VCP	0000	0000	1	1	
COL-PWS-4015093	2/6/2019			243.81	8	VCP	0000	0000	1	1	
COL-PWS-4015750	2/6/2019			321.65	8	RPM	0000	0000	1	1	
COL-PWS-4016408	2/6/2019			345.34	8	RPM	0000	0000	1	1	
COL-PWS-4016516	2/6/2019			195.02	8	VCP	0000	0000	1	1	
COL-PWS-4017063	2/6/2019			83.42	8	VCP	0000	0000	1	1	
COL-PWS-4017174	2/6/2019			234.18	8	VCP	0000	0000	1	1	
COL-PWS-4017285	2/6/2019			27.48	8	VCP	0000	0000	1	1	
COL-PWS-4017952	2/6/2019			297.01	8	VCP	0000	0000	1	1	
COL-PWS-4002263	2/6/2019			198.08	8	VCP	2100	0000	2	1	Fracture @ 194 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-2002274	2/6/2019			247.42	8	VCP	0000	3100	1	3	Medium roots @ 91 ft. & 98 ft.
COL-PWS-2002309	2/6/2019			368.84	8	VCP	0000	3321	1	3	Medium roots @ 252 ft., 262 ft. & 267ft. Deposits settled other - 10% - @ 368 ft.
COL-PWS-2001588	2/6/2019			53.61	8	VCP	0000	0000	1	1	
COL-PWS-2001763	2/6/2019			352.30	8	VCP	0000	0000	1	1	
COL-PWS-2001822	2/6/2019			372.75	8	VCP	0000	1300	1	1	Fine roots @ 73 ft., 106 ft. & 288 ft.
COL-PWS-2002386	2/6/2019			254.47	8	VCP	0000	0000	1	1	
COL-PWS-2002026	2/6/2019			245.76	8	VCP	2100	0000	2	1	Fracture @ 194 ft.
COL-PWS-4009180	2/7/2019			303.05	8	VCP	4C00	4500	4	4	Water level - sag in pipe - 55% @ 99ft. - 118ft & 156 ft. - 182 ft. & 223 ft. - 289 ft. Camera underwater - @ 99 ft. -114 ft. & 164 ft. - 173 ft.
COL-PWS-4009158	2/7/2019			177.07	8	VCP	5100	5100	5	5	Broken pipe @ 173 ft. Infiltration qusher - @ 173 ft.
COL-PWS-4009390	2/7/2019			290.96	8	RPM	0000	4200	1	4	Deposits attached grease - 25% - @ 281 ft. & 290 ft.
COL-PWS-4000764	2/7/2019			355.61	8	VCP	0000	0000	1	1	
COL-PWS-4007337	2/7/2019			266.10	8	RPM	0000	0000	1	1	
COL-PWS-4009456	2/7/2019			298.86	8	RPM	0000	0000	1	1	
COL-PWS-4013036	2/7/2019			357.46	8	VCP	0000	0000	1	1	
COL-PWS-4012526	2/8/2019			279.75	8	RPM	3900	0000	3	1	Water level - sag in pipe - 45% between 90 ft. - 137 ft.
COL-PWS-4020977	2/8/2019			259.08	8	RPM	3100	0000	3	1	Water level - sag in pipe - 40% @ 148 ft.
COL-PWS-4012153	2/8/2019			260.34	8	RPM	0000	0000	1	1	
COL-PWS-4012881	2/8/2019			258.20	8	RPM	0000	0000	1	1	
COL-PWS-4013762	2/8/2019			259.47	8	RPM	0000	0000	1	1	
COL-PWS-4014517	2/8/2019			323.62	8	RPM	0000	0000	1	1	
COL-PWS-4015071	2/8/2019			360.00	8	RPM	0000	0000	1	1	
COL-PWS-4015082	2/8/2019			284.62	8	RPM	0000	0000	1	1	
COL-PWS-4015762	2/8/2019			337.08	8	RPM	0000	0000	1	1	
COL-PWS-4016099	2/8/2019			259.37	8	RPM	0000	0000	1	1	
COL-PWS-4017019	2/8/2019			342.93	8	RPM	0000	0000	1	1	
COL-PWS-2004301	2/11/2019			273.80	8	VCP	3A00	4300	3	4	Water level - sag in pipe - 50% between 40 ft. - 94 ft.
COL-PWS-4012931	2/11/2019			352.79	8	VCP	5142	0000	5	1	Broken pipe @ 264 ft. Crack @ 189 ft. Multiple fractures @ 264 ft. & 266 ft.
COL-PWS-2003703	2/11/2019			205.74	12	VCP	0000	3311	1	3	Deposits settled other - 15% - debris under flow - between 15 ft. - 32 ft.
COL-PWS-2003773	2/11/2019			172.78	8	VCP	0000	4232	1	4	Rootball in Lateral @ 26 ft. & 105 ft. Tap break-in defective @ 26 ft. & 105 ft.
COL-PWS-2003942	2/11/2019			196.09	8	VCP	0000	5135	1	5	Obstacles other - 50% - Ragging build up - @ 196 ft. Medium roots throughout pipe.
COL-PWS-2004028	2/11/2019			123.74	8	VCP	0000	4134	1	4	Medium roots at joint throughout pipe.
COL-PWS-4004350	2/11/2019			89.10	8	PVC	0000	0000	1	1	
COL-PWS-4012511	2/11/2019			268.22	8	VCP	0000	0000	1	1	
COL-PWS-2003359	2/11/2019			213.34	8	VCP	0000	0000	1	1	
COL-PWS-2003637	2/11/2019			254.10	8	VCP	0000	2600	1	2	Deposits attached encrustation - 5% - between 222 ft. - 254 ft.
COL-PWS-2003698	2/11/2019			240.45	8	VCP	0000	2B11	1	2	Fine roots @ 38 ft. Deposits attached encrustation - 5% - between 152 ft. - 229 ft.
COL-PWS-2003822	2/11/2019			197.35	12	VCP	0000	0000	1	1	
COL-PWS-2003831	2/11/2019			82.49	8	VCP	0000	1100	1	1	Vermin cockroach @ 12 ft.
COL-PWS-2003905	2/11/2019			127.44	12	VCP	0000	0000	1	1	
COL-PWS-2004017	2/11/2019			183.51	12	VCP	0000	0000	1	1	
COL-PWS-2004157	2/11/2019			215.00	8	VCP	0000	0000	1	1	
COL-PWS-2004175	2/11/2019			350.73	10	VCP	0000	0000	1	1	
COL-PWS-4000368	2/11/2019			230.26	8	RPM	0000	0000	1	1	
COL-PWS-4000959	2/11/2019			312.32	8	RPM	0000	0000	1	1	
COL-PWS-4001193	2/11/2019			353.02	8	RPM	0000	0000	1	1	
COL-PWS-4002223	2/11/2019			180.42	8	RPM	0000	0000	1	1	
COL-PWS-4002840	2/11/2019			217.02	8	RPM	0000	0000	1	1	
COL-PWS-4002873	2/11/2019			185.09	8	PVC	0000	0000	1	1	
COL-PWS-4002926	2/11/2019			222.03	8	RPM	0000	0000	1	1	
COL-PWS-4003035	2/11/2019			272.00	8	PVC	0000	0000	1	1	
COL-PWS-4003618	2/11/2019			300.38	8	RPM	0000	0000	1	1	

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COL-PWS-4003844	2/11/2019			279.01	8	PVC	0000	0000	1	1	
COL-PWS-4004150	2/11/2019			321.07	8	RPM	0000	0000	1	1	
COL-PWS-4004238	2/11/2019			200.77	8	RPM	0000	0000	1	1	
COL-PWS-4004260	2/11/2019			300.69	8	RPM	0000	0000	1	1	
COL-PWS-4004819	2/11/2019			328.20	8	RPM	0000	0000	1	1	
COL-PWS-4012187	2/11/2019			321.28	8	RPM	0000	0000	1	1	
COL-PWS-4012189	2/11/2019			255.89	8	RPM	0000	0000	1	1	
COL-PWS-4012194	2/11/2019			184.34	8	RPM	0000	0000	1	1	
COL-PWS-4012421	2/11/2019			76.12	8	VCP	0000	0000	1	1	
COL-PWS-4012461	2/11/2019			302.50	8	RPM	0000	0000	1	1	
COL-PWS-4012472	2/11/2019			96.20	8	VCP	0000	0000	1	1	
COL-PWS-4012596	2/11/2019			163.97	8	VCP	0000	0000	1	1	
COL-PWS-4012633	2/11/2019			161.59	8	VCP	0000	0000	1	1	
COL-PWS-4014113	2/11/2019			340.31	8	RPM	0000	0000	1	1	
COL-PWS-4021010	2/11/2019			100.04	8	RPM	0000	0000	1	1	
COL-PWS-4012680	2/11/2019			281.63	8	VCP	2600	4600	2	4	Water level - sag in pipe - 25% - between 94 ft. - 126 ft. Camera under water between 126 ft. - 158 ft.
COL-PWS-4012817	2/11/2019			302.01	8	VCP	2B00	3200	2	3	Water level - sag in pipe - 25% - between 130 ft. - 198 ft. Obstacles rocks - 20% - @ 166 ft. & 279 ft.
COL-PWS-4012347	2/11/2019			233.14	8	RPM	2200	0000	2	1	Water level - sag in pipe - 25% - between 143 ft. - 154 ft.
COL-PWS-4013106	2/11/2019			132.57	8	VCP	2300	0000	2	1	Water level - sag in pipe - 25% - between 121 ft. - 130 ft. Fracture @ 130 ft.
COL-PWS-4004350	2/11/2019			182.24	8	PVC	0000	0000	1	1	
COL-PWS-4012185	2/11/2019			356.96	8	RPM	0000	0000	1	1	
COL-PWS-2003236	2/12/2019			117.98	8	PVC	5100	4131	5	4	Deformed - 20% - @41 ft. Water Mark - 35% - @ 84 ft. Deposits settled other - 15% - @ 117 ft.
COL-PWS-4012773	2/12/2019			302.50	8	VCP	3A00	4500	3	4	Camera underwater - 151 ft. - 178 ft.
COL-PWS-2003262	2/12/2019			86.98	8	PVC	0000	5142	1	5	Water Mark - 95% - @ 27 ft. Deposits attached grease - @ 41 ft. - 86 ft.
COL-PWS-4004161	2/12/2019			226.63	8	RPM	0000	0000	1	1	
COL-PWS-2003191	2/12/2019			188.29	8	VCP	0000	0000	1	1	
COL-PWS-2003208	2/12/2019			356.87	8	PVC	0000	0000	1	1	
COL-PWS-2003218	2/12/2019			34.71	8	PVC	0000	0000	1	1	
COL-PWS-2003385	2/12/2019			280.23	8	PVC	0000	0000	1	1	
COL-PWS-4000925	2/12/2019			150.41	8	RPM	0000	0000	1	1	
COL-PWS-4001458	2/12/2019			245.17	8	RPM	0000	0000	1	1	
COL-PWS-4001620	2/12/2019			291.04	8	RPM	0000	0000	1	1	
COL-PWS-4001706	2/12/2019			353.32	8	RPM	0000	0000	1	1	
COL-PWS-4002028	2/12/2019			285.20	8	RPM	0000	0000	1	1	
COL-PWS-4002161	2/12/2019			208.14	8	RPM	0000	0000	1	1	
COL-PWS-4002443	2/12/2019			286.17	8	RPM	0000	0000	1	1	
COL-PWS-4002752	2/12/2019			350.10	8	RPM	0000	0000	1	1	
COL-PWS-4002818	2/12/2019			200.11	8	RPM	0000	0000	1	1	
COL-PWS-4003900	2/12/2019			215.05	8	RPM	0000	0000	1	1	
COL-PWS-4003932	2/12/2019			327.04	8	RPM	0000	0000	1	1	
COL-PWS-4004586	2/12/2019			70.10	8	RPM	0000	0000	1	1	
COL-PWS-4005004	2/12/2019			351.11	8	RPM	0000	0000	1	1	
COL-PWS-4005279	2/12/2019			346.51	8	RPM	0000	0000	1	1	
COL-PWS-4006059	2/12/2019			325.07	8	RPM	0000	0000	1	1	
COL-PWS-4006551	2/12/2019			351.18	8	RPM	0000	0000	1	1	
COL-PWS-4006803	2/12/2019			350.36	8	RPM	0000	0000	1	1	
COL-PWS-4006877	2/12/2019			350.29	8	RPM	0000	0000	1	1	
COL-PWS-4012377	2/12/2019			295.84	8	VCP	0000	0000	1	1	
COL-PWS-4012455	2/12/2019			305.88	8	VCP	0000	0000	1	1	
COL-PWS-4012632	2/12/2019			237.61	8	VCP	0000	0000	1	1	
COL-PWS-4012694	2/12/2019			274.98	8	VCP	0000	0000	1	1	
COL-PWS-4012724	2/12/2019			156.62	8	VCP	0000	0000	1	1	
COL-PWS-4012768	2/12/2019			265.93	8	RPM	0000	0000	1	1	
COL-PWS-4012776	2/12/2019			304.29	8	VCP	0000	0000	1	1	
COL-PWS-4012827	2/12/2019			320.69	8	VCP	0000	0000	1	1	

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COL-PWS-4012835	2/12/2019			282.63	8	VCP	0000	0000	1	1	
COL-PWS-4012868	2/12/2019			284.02	8	RPM	0000	0000	1	1	
COL-PWS-4012897	2/12/2019			223.10	8	VCP	0000	0000	1	1	
COL-PWS-4012933	2/12/2019			302.40	8	VCP	0000	0000	1	1	
COL-PWS-4012942	2/12/2019			296.64	8	VCP	0000	0000	1	1	
COL-PWS-4013007	2/12/2019			284.81	8	RPM	0000	0000	1	1	
COL-PWS-4019074	2/12/2019			266.03	8	VCP	0000	0000	1	1	
COL-PWS-4012529	2/12/2019			236.52	8	VCP	2300	0000	2	1	Water level - sag in pipe - 25% - @ 221 ft. - 236 ft.
COL-PWS-2003262	2/12/2019			104.04	8	PVC	0000	5100	1	5	Water Mark - 95% - @ 63 ft.
COL-PWS-2003236	2/12/2019			156.60	8	PVC	0000	0000	1	1	
COL-PWS-4004161	2/12/2019			259.91	8	RPM	0000	0000	1	1	
COL-PWS-4017815	2/13/2019			322.26	8	VCP	3428	4100	3	4	Water level - sag in pipe - 35% - 72 ft. - 94 ft., 205 ft. - 227 ft., 234 ft. - 255 ft.
COL-PWS-4011807	2/13/2019			438.45	12	VCP	4121	0000	4	1	Deformed - 5% - @ 210 ft. Crack @ 210 ft.
COL-PWS-4010846	2/13/2019			70.76	12	VCP	5100	0000	5	1	Broken pipe @ 2 ft.
COL-PWS-2003389	2/13/2019			102.77	8	VCP	3100	4100	3	4	Broken pipe @ 95 ft. Medium roots@ 99 ft.
COL-PWS-4000005	2/13/2019			157.00	8	VCP	0000	5133	1	5	Tap break-in intruding - 2 o'clock - @ 156 ft. Deposits attacked grease - 15% - 31 ft. - 46 ft.
COL-PWS-4005865	2/13/2019			350.19	8	RPM	0000	3100	1	3	Deposits settled compacted - 15% - @ 350 ft.
COL-PWS-4010223	2/13/2019			456.34	12	VCP	0000	4100	1	4	Obstacles construction debris - 30% - @ 409 ft.
COL-PWS-2003310	2/13/2019			188.48	8	VCP	0000	4100	1	4	Root ball in lateral - 3 o'clock - @ 82 ft.
COL-PWS-2003447	2/13/2019			168.49	8	VCP	0000	4100	1	4	Medium roots @ 55 ft.
COL-PWS-2003516	2/13/2019			203.30	8	VCP	0000	0000	1	1	
COL-PWS-2003521	2/13/2019			344.88	8	VCP	0000	0000	1	1	
COL-PWS-2003620	2/13/2019			353.75	8	PVC	0000	0000	1	1	
COL-PWS-4002110	2/13/2019			350.02	8	RPM	0000	0000	1	1	
COL-PWS-4003499	2/13/2019			331.25	8	RPM	0000	0000	1	1	
COL-PWS-4004619	2/13/2019			207.18	8	RPM	0000	0000	1	1	
COL-PWS-4004775	2/13/2019			300.01	8	RPM	0000	0000	1	1	
COL-PWS-4004830	2/13/2019			208.07	8	RPM	0000	0000	1	1	
COL-PWS-4004908	2/13/2019			388.33	8	RPM	0000	0000	1	1	
COL-PWS-4005312	2/13/2019			300.50	8	RPM	0000	0000	1	1	
COL-PWS-4005376	2/13/2019			273.13	8	RPM	0000	0000	1	1	
COL-PWS-4005537	2/13/2019			302.49	8	RPM	0000	0000	1	1	
COL-PWS-4005644	2/13/2019			351.10	8	RPM	0000	0000	1	1	
COL-PWS-4006194	2/13/2019			302.05	8	RPM	0000	0000	1	1	
COL-PWS-4006409	2/13/2019			186.08	8	RPM	0000	0000	1	1	
COL-PWS-4006660	2/13/2019			186.02	8	RPM	0000	0000	1	1	
COL-PWS-4010434	2/13/2019			193.39	12	VCP	0000	0000	1	1	
COL-PWS-4010525	2/13/2019			179.47	12	VCP	0000	0000	1	1	
COL-PWS-4010609	2/13/2019			81.69	12	VCP	1100	0000	1	1	Crack @ 78 ft.
COL-PWS-4011055	2/13/2019			463.00	12	VCP	0000	0000	1	1	
COL-PWS-4011540	2/13/2019			455.34	12	VCP	0000	0000	1	1	
COL-PWS-4012048	2/13/2019			422.45	12	VCP	0000	0000	1	1	
COL-PWS-4012273	2/13/2019			460.41	12	VCP	0000	0000	1	1	
COL-PWS-4020768	2/13/2019			402.57	12	VCP	0000	0000	1	1	
COL-PWS-2003382	2/13/2019			62.70	8	VCP	2100	0000	2	1	Large offset joint @ 62 ft.
COL-PWS-4020956	2/13/2019			91.32	8	RPM	2200	0000	2	1	Large offset joint @ 81 ft. & 88 ft.
COL-PWS-4010651	2/13/2019			381.51	12	VCP	2100	0000	2	1	Fracture @ 353 ft.
COL-PWS-2003389	2/13/2019			40.86	8	VCP	0000	4100	1	4	Medium roots @ 40 ft.
COL-PWS-2003382	2/13/2019			63.09	8	VCP	0000	0000	1	1	
COL-PWS-4000005	2/13/2019			111.68	8	VCP	0000	5100	1	5	Tap break-in intruding - 10 o'clock - @ 110 ft.
COL-PWS-4020956	2/13/2019			260.63	8	RPM	2100	0000	2	1	Large offset joint @ 260 ft.
COL-PWS-4009988	2/14/2019			351.00	8	PVC	0000	3100	1	3	Obstacles rocks - 15% - @ 0 ft.
COL-PWS-4014484	2/14/2019			232.96	8	RPM	0000	4100	1	4	Deposits settled compacted - 25% - @ 232 ft.
COL-PWS-4009829	2/14/2019			349.01	8	PVC	0000	2200	1	2	Obstacles rocks - 10% - @ 1 ft. & 349 ft.
COL-PWS-4009626	2/14/2019			383.69	8	PVC	0000	0000	1	1	
COL-PWS-4009680	2/14/2019			181.76	8	PVC	0000	0000	1	1	
COL-PWS-4009726	2/14/2019			172.62	8	PVC	0000	0000	1	1	
COL-PWS-4009755	2/14/2019			360.04	8	PVC	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4009762	2/14/2019			259.07	8	PVC	0000	0000	1	1	
COL-PWS-4009823	2/14/2019			247.45	8	PVC	0000	0000	1	1	
COL-PWS-4009850	2/14/2019			350.40	8	PVC	0000	0000	1	1	
COL-PWS-4009898	2/14/2019			283.12	8	PVC	0000	2100	1	2	Obstacles other - 10% - @ 0 ft.
COL-PWS-4009964	2/14/2019			359.54	8	PVC	0000	0000	1	1	
COL-PWS-4012722	2/14/2019			232.25	8	PVC	0000	0000	1	1	
COL-PWS-4013177	2/14/2019			275.45	8	RPM	0000	0000	1	1	
COL-PWS-4013568	2/14/2019			348.25	8	PVC	0000	0000	1	1	
COL-PWS-4013622	2/14/2019			230.10	8	RPM	0000	0000	1	1	
COL-PWS-4014887	2/14/2019			363.09	8	PVC	0000	0000	1	1	
COL-PWS-4015288	2/14/2019			297.13	8	RPM	0000	0000	1	1	
COL-PWS-4016199	2/14/2019			220.34	8	RPM	0000	0000	1	1	
COL-PWS-4016264	2/14/2019			335.11	8	RPM	0000	0000	1	1	
COL-PWS-4017075	2/14/2019			239.05	8	RPM	0000	0000	1	1	
COL-PWS-4014212	2/14/2019			2.10	8	RPM	0000	4100	1	4	Deposits settled compacted - 30% - @ 0 ft..
COL-PWS-4009829	2/14/2019			63.00	8	PVC	0000	0000	1	1	
COL-PWS-4007771	2/15/2019			35.18	8	PVC	0000	0000	1	1	
COL-PWS-4013081	2/15/2019			17.94	8	RPM	0000	0000	1	1	
COL-PWS-4006846	2/15/2019			353.18	8	PVC	0000	0000	1	1	
COL-PWS-4006922	2/15/2019			353.68	8	PVC	0000	0000	1	1	
COL-PWS-4007032	2/15/2019			320.89	8	PVC	0000	0000	1	1	
COL-PWS-4007054	2/15/2019			275.67	8	PVC	0000	0000	1	1	
COL-PWS-4007683	2/15/2019			162.68	8	PVC	0000	0000	1	1	
COL-PWS-4007694	2/15/2019			333.71	8	PVC	0000	0000	1	1	
COL-PWS-4007716	2/15/2019			262.35	8	PVC	0000	0000	1	1	
COL-PWS-4007816	2/15/2019			293.16	8	PVC	0000	0000	1	1	
COL-PWS-4008878	2/15/2019			335.59	8	PVC	0000	0000	1	1	
COL-PWS-4008900	2/15/2019			277.06	8	PVC	0000	0000	1	1	
COL-PWS-4009189	2/15/2019			310.06	8	PVC	0000	0000	1	1	
COL-PWS-4009190	2/15/2019			333.41	8	PVC	0000	0000	1	1	
COL-PWS-4009200	2/15/2019			281.34	8	PVC	0000	0000	1	1	
COL-PWS-4011183	2/15/2019			167.54	8	RPM	0000	0000	1	1	
COL-PWS-4011215	2/15/2019			145.06	8	RPM	0000	0000	1	1	
COL-PWS-4011226	2/15/2019			358.95	8	RPM	0000	0000	1	1	
COL-PWS-4011356	2/15/2019			345.16	8	RPM	0000	0000	1	1	
COL-PWS-4011847	2/15/2019			230.51	8	RPM	0000	0000	1	1	
COL-PWS-4011891	2/15/2019			288.75	8	RPM	0000	0000	1	1	
COL-PWS-4012186	2/15/2019			258.26	8	RPM	0000	0000	1	1	
COL-PWS-4012196	2/15/2019			343.08	8	RPM	0000	0000	1	1	
COL-PWS-4012656	2/15/2019			349.06	8	RPM	0000	0000	1	1	
COL-PWS-4013219	2/15/2019			311.27	8	RPM	0000	0000	1	1	
COL-PWS-4013328	2/15/2019			63.31	8	RPM	0000	0000	1	1	
COL-PWS-4013911	2/15/2019			243.44	8	RPM	0000	0000	1	1	
COL-PWS-4014027	2/15/2019			292.24	8	RPM	0000	0000	1	1	
COL-PWS-4015365	2/15/2019			208.01	8	RPM	0000	0000	1	1	
COL-PWS-4007771	2/15/2019			281.43	8	PVC	0000	0000	1	1	
COL-PWS-4013081	2/15/2019			332.87	8	RPM	0000	0000	1	1	
COL-PWS-2001039	2/19/2019			245.91	8	VCP	0000	3515	1	3	Fine & Medium roots throughout line.
COL-PWS-2000924	2/19/2019			332.79	8	VCP	0000	4134	1	4	Root ball @ 327 ft. Re-clean. Fine and medium roots throughout line.
COL-PWS-2000961	2/19/2019			297.20	8	VCP	0000	5132	1	5	Root ball - 95% - @ 296 ft. RE-CLEAN. Medium roots at joint - @ 272 ft. & 282 ft. Deposits attached encrustation - 10% - between 129 ft - 297 ft.
COL-PWS-2001400	2/19/2019			263.66	8	VCP	0000	4100	1	4	Medium roots @ 209 ft.
COL-PWS-2003049	2/19/2019			288.13	8	VCP	0000	0000	1	1	
COL-PWS-2003199	2/19/2019			250.30	8	VCP	0000	0000	1	1	
COL-PWS-2003054	2/19/2019			283.74	8	VCP	1100	2A00	1	2	Medium offset joint @ 40 ft. Deposits attached encrustation - 5% - between 232 ft. - 283 ft.
COL-PWS-4012206	2/19/2019			401.18	12	VCP	0000	0000	1	1	
COL-PWS-4012268	2/19/2019			276.57	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4012344	2/19/2019			327.05	8	VCP	0000	0000	1	1	
COL-PWS-4012364	2/19/2019			378.43	12	VCP	0000	0000	1	1	
COL-PWS-4012513	2/19/2019			532.86	15	VCP	0000	0000	1	1	
COL-PWS-4012551	2/19/2019			354.48	12	VCP	1200	2100	1	2	Cracks @ 110 ft. & 153 ft. Intruding sealing ring loose/poorly fitting @ 114 ft.
COL-PWS-4012716	2/19/2019			305.58	15	VCP	0000	0000	1	1	
COL-PWS-4012853	2/19/2019			109.31	15	VCP	0000	0000	1	1	
COL-PWS-4012892	2/19/2019			365.61	18	VCP	0000	0000	1	1	
COL-PWS-4015701	2/19/2019			23.75	12	VCP	0000	0000	1	1	
COL-PWS-4012790	2/19/2019			444.81	15	VCP	2700	0000	2	1	Water level - sag in pipe - 30% - between 310 ft. - 346 ft.
COL-PWS-2001039	2/19/2019			249.32	8	VCP	0000	3311	1	3	Medium roots in lateral - 10 o'clock - @ 26 ft. & 228 ft. Roots at joint - @ 112 ft. & 244 ft.
COL-PWS-2000821	2/19/2019			151.43	8	VCP	0000	0000	1	1	
COL-PWS-2001146	2/19/2019			190.14	8	VCP	0000	0000	1	1	
COL-PWS-2001182	2/19/2019			351.12	8	VCP	0000	0000	1	1	
COL-PWS-2001347	2/19/2019			282.28	8	VCP	0000	0000	1	1	
COL-PWS-2001360	2/19/2019			146.65	8	VCP	0000	0000	1	1	
COL-PWS-2001386	2/19/2019			91.07	8	VCP	0000	0000	1	1	
COL-PWS-2001442	2/19/2019			283.84	8	VCP	0000	0000	1	1	
COL-PWS-2001610	2/19/2019			330.25	8	VCP	0000	0000	1	1	
COL-PWS-2003049	2/19/2019			283.84	8	VCP	0000	0000	1	1	
COL-PWS-2003199	2/19/2019			30.71	8	VCP	0000	0000	1	1	
COL-PWS-4012790	2/19/2019			508.81	15	VCP	0000	0000	1	1	
COL-PWS-4014212	2/21/2019			296.66	8	RPM	0000	4131	1	4	Deposits settled compacted - 30% - @ 296 ft. Infiltration dripper - @ 296 ft.
COL-PWS-4000115	2/21/2019			179.11	8	RPM	0000	0000	1	1	
COL-PWS-4000224	2/21/2019			99.07	8	RPM	0000	0000	1	1	
COL-PWS-4000401	2/21/2019			292.14	8	RPM	0000	0000	1	1	
COL-PWS-4000445	2/21/2019			357.11	8	VCP	0000	0000	1	1	
COL-PWS-4000731	2/21/2019			178.08	8	RPM	0000	0000	1	1	
COL-PWS-4000828	2/21/2019			151.62	8	RPM	0000	0000	1	1	
COL-PWS-4001139	2/21/2019			143.02	8	RPM	0000	0000	1	1	
COL-PWS-4001857	2/21/2019			307.00	8	RPM	0000	0000	1	1	
COL-PWS-4009371	2/21/2019			371.17	8	PVC	0000	0000	1	1	
COL-PWS-4009496	2/21/2019			323.67	8	PVC	0000	0000	1	1	
COL-PWS-4009497	2/21/2019			338.87	8	PVC	0000	0000	1	1	
COL-PWS-4009616	2/21/2019			334.70	8	PVC	0000	0000	1	1	
COL-PWS-4009743	2/21/2019			335.00	8	PVC	0000	0000	1	1	
COL-PWS-4009877	2/21/2019			334.20	8	PVC	0000	0000	1	1	
COL-PWS-4010406	2/21/2019			228.07	8	PVC	0000	0000	1	1	
COL-PWS-4010534	2/21/2019			264.74	8	PVC	0000	0000	1	1	
COL-PWS-4013048	2/21/2019			275.04	8	PVC	0000	0000	1	1	
COL-PWS-4014168	2/21/2019			346.01	8	PVC	0000	0000	1	1	
COL-PWS-4014929	2/21/2019			303.09	8	RPM	0000	0000	1	1	
COL-PWS-4015257	2/21/2019			280.06	8	RPM	0000	0000	1	1	
COL-PWS-4015475	2/21/2019			338.16	8	PVC	0000	0000	1	1	
COL-PWS-4016065	2/21/2019			336.37	8	RPM	0000	0000	1	1	
COL-PWS-4016386	2/21/2019			139.28	8	RPM	0000	0000	1	1	
COL-PWS-4016765	2/21/2019			328.33	8	RPM	0000	0000	1	1	
COL-PWS-4016876	2/21/2019			275.88	8	RPM	0000	0000	1	1	
COL-PWS-4017407	2/21/2019			183.09	8	RPM	0000	0000	1	1	
COL-PWS-4017527	2/21/2019			350.53	8	RPM	0000	0000	1	1	
COL-PWS-4014179	2/22/2019			299.70	8	VCP	0000	3100	1	3	Infiltration dripper - @ 299 ft.
COL-PWS-4015246	2/22/2019			24.14	8	VCP	0000	0000	1	1	
COL-PWS-4012971	2/22/2019			301.18	8	VCP	2300	2600	2	2	Water level - sag in pipe - 20% - between 146 ft. - 164 ft. Deposits attached grease - 10% - between 151 ft. -164 ft.
COL-PWS-4015387	2/22/2019			274.02	8	VCP	2400	0000	2	1	Water level - sag in pipe - 30% - between 15 ft. - 32 ft. Large offset joint @ 82 ft.
COL-PWS-4000159	2/25/2019			318.70	15	VCP	3300	4200	3	4	Water level - sag in pipe - 35% - between 36 ft. - 52 ft. Camera underwater between 42 ft. - 52 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4007204	2/25/2019			405.75	15	VCP	3100	0000	3	1	Water level - sag in pipe - 35% - @ 235 ft.
COL-PWS-4000148	2/25/2019			205.69	8	RPM	3400	0000	3	1	Water level - sag in pipe - 35% - between 187 ft. - 205 ft.
COL-PWS-4011130	2/25/2019			1.50	8	RPM	0000	5100	1	5	Deposits settled compacted - 95% - @ 0 ft. Re-clean.
COL-PWS-4008480	2/25/2019			171.92	12	VCP	0000	4131	1	4	Camera underwater between 167 ft. - 171 ft. Obstacles other - 20% - @ 171 ft.
COL-PWS-2001529	2/25/2019	1:32:05 PM	D	191.41	15	VCP	0000	4131	1	4	Medium roots @ 47 ft & 77 ft. Deposits attached encrustation - 5% - @ 64 ft. & 191 ft.
COL-PWS-2001531	2/25/2019	1:41:21 PM	D	81.42	15	VCP	0000	3100	1	3	Medium roots at joint @ 41 ft.
COL-PWS-2001818	2/25/2019	12:25:47 PM	U	201.64	15	VCP	0000	4100	1	4	Medium roots @ 113 ft.
COL-PWS-2001825	2/25/2019	12:35:52 PM	D	241.33	15	VCP	0000	4100	1	4	Medium roots @ 142 ft.
COL-PWS-2002849	2/25/2019	10:49:28 AM	D	50.90	8	PVC	0000	1100	1	1	Vermin cockroach.
COL-PWS-2004126	2/25/2019	8:40:47 AM	D	350.24	8	VCP	0000	0000	1	1	
COL-PWS-2001659	2/25/2019	1:11:54 PM	D	250.49	15	VCP	0000	0000	1	1	
COL-PWS-2001673	2/25/2019	1:05:11 PM	U	77.03	15	VCP	0000	0000	1	1	
COL-PWS-2001943	2/25/2019	11:59:53 AM	D	215.29	15	VCP	0000	0000	1	1	
COL-PWS-2002045	2/25/2019	11:37:43 AM	U	406.31	15	VCP	0000	0000	1	1	
COL-PWS-2002709	2/25/2019	10:07:18 AM	D	66.60	8	PVC	0000	0000	1	1	
COL-PWS-2002736	2/25/2019	10:29:55 AM	D	198.52	8	PVC	0000	0000	1	1	
COL-PWS-2002933	2/25/2019	9:43:11 AM	D	74.01	8	PVC	0000	0000	1	1	
COL-PWS-2002939	2/25/2019	9:51:49 AM	D	307.44	8	VCP	0000	0000	1	1	
COL-PWS-4000720	2/25/2019			310.27	8	RPM	0000	0000	1	1	
COL-PWS-4001259	2/25/2019			463.59	15	VCP	0000	0000	1	1	
COL-PWS-4001292	2/25/2019			288.11	8	RPM	0000	0000	1	1	
COL-PWS-4004719	2/25/2019			305.88	12	VCP	0000	0000	1	1	
COL-PWS-4005373	2/25/2019			305.78	12	VCP	0000	0000	1	1	
COL-PWS-4005765	2/25/2019			456.34	15	VCP	0000	0000	1	1	
COL-PWS-4006496	2/25/2019			280.34	12	VCP	0000	0000	1	1	
COL-PWS-4006529	2/25/2019			112.76	8	RPM	0000	0000	1	1	
COL-PWS-4006716	2/25/2019			339.12	8	RPM	0000	0000	1	1	
COL-PWS-4006824	2/25/2019			284.09	8	RPM	0000	0000	1	1	
COL-PWS-4006855	2/25/2019			359.07	8	RPM	0000	0000	1	1	
COL-PWS-4006866	2/25/2019			273.03	8	RPM	0000	0000	1	1	
COL-PWS-4007215	2/25/2019			277.36	12	VCP	0000	0000	1	1	
COL-PWS-4008124	2/25/2019			100.57	12	VCP	1100	0000	1	1	Crack @ 8 ft.
COL-PWS-4010627	2/25/2019			248.27	8	RPM	0000	0000	1	1	
COL-PWS-4010670	2/25/2019			350.09	8	RPM	0000	0000	1	1	
COL-PWS-4011913	2/25/2019			212.50	8	RPM	0000	0000	1	1	
COL-PWS-4012545	2/25/2019			228.26	8	RPM	0000	0000	1	1	
COL-PWS-4014798	2/25/2019			348.04	8	RPM	0000	0000	1	1	
COL-PWS-4014985	2/25/2019			457.63	15	VCP	0000	0000	1	1	
COL-PWS-4016013	2/25/2019			190.13	8	RPM	0000	0000	1	1	
COL-PWS-4016743	2/25/2019			201.34	15	VCP	0000	0000	1	1	
COL-PWS-4016797	2/25/2019			322.68	8	RPM	0000	0000	1	1	
COL-PWS-4017516	2/25/2019			135.95	15	VCP	0000	0000	1	1	
COL-PWS-2002849	2/25/2019	10:41:03 AM	D	106.18	8	PVC	0000	0000	1	1	
COL-PWS-2004126	2/25/2019	9:01:05 AM	D	175.51	8	VCP	0000	0000	1	1	
COL-PWS-4011130	2/25/2019			388.14	8	RPM	2100	4300	2	4	Water mark - 50% - @ 203 ft. Water level, sag in pipe - 20% - @ 335 ft. Camera underwater between 347 ft - 388 ft. Blockage in manhole. Re-clean.
COL-PWS-4010127	2/26/2019			311.65	8	RPM	0000	4300	1	4	Camera underwater between 72 ft. - 82 ft. & between 245 ft. - 253 ft.
COL-PWS-4006749	2/26/2019			75.05	8	VCP	0000	0000	1	1	
COL-PWS-4009927	2/26/2019			148.27	8	VCP	0000	0000	1	1	
COL-PWS-4000981	2/26/2019			283.52	8	VCP	0000	0000	1	1	
COL-PWS-4003215	2/26/2019			304.39	8	VCP	0000	0000	1	1	
COL-PWS-4004686	2/26/2019			277.41	8	RPM	0000	0000	1	1	
COL-PWS-4006437	2/26/2019			239.01	8	RPM	0000	0000	1	1	
COL-PWS-4006474	2/26/2019			218.12	8	RPM	0000	0000	1	1	
COL-PWS-4007065	2/26/2019			236.31	8	RPM	0000	0000	1	1	
COL-PWS-4007082	2/26/2019			277.26	8	RPM	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4007605	2/26/2019			270.65	8	RPM	0000	0000	1	1	
COL-PWS-4007649	2/26/2019			331.59	8	RPM	0000	0000	1	1	
COL-PWS-4007672	2/26/2019			282.11	8	RPM	0000	0000	1	1	
COL-PWS-4007749	2/26/2019			298.20	8	RPM	0000	0000	1	1	
COL-PWS-4007760	2/26/2019			213.19	8	RPM	0000	0000	1	1	
COL-PWS-4008447	2/26/2019			80.48	8	RPM	0000	0000	1	1	
COL-PWS-4008458	2/26/2019			63.05	8	RPM	0000	0000	1	1	
COL-PWS-4009578	2/26/2019			312.94	10	RPM	0000	0000	1	1	
COL-PWS-4010321	2/26/2019			62.21	8	VCP	0000	0000	1	1	
COL-PWS-4010363	2/26/2019			51.97	8	STL	1A00	0000	1	1	Surface roughness increased - between 2 ft. - 51 ft.
COL-PWS-4011649	2/26/2019			334.20	8	VCP	0000	0000	1	1	
COL-PWS-4011724	2/26/2019			312.54	8	VCP	0000	0000	1	1	
COL-PWS-4013360	2/26/2019			307.07	8	VCP	0000	0000	1	1	
COL-PWS-4015530	2/26/2019			226.88	8	VCP	0000	0000	1	1	
COL-PWS-4017837	2/26/2019			38.66	8	VCP	0000	0000	1	1	
COL-PWS-4010805	2/26/2019			204.62	8	VCP	2400	0000	2	1	Water level - sag in pipe - 20% - between 144 ft. 162 ft.
COL-PWS-4006749	2/26/2019			275.59	8	RPM	0000	0000	1	1	
COL-PWS-4009927	2/26/2019			112.30	8	VCP	0000	0000	1	1	
COL-PWS-4009199	2/27/2019	1:33:44 PM	U	328.11	8	RPM	0000	3E00	1	3	Deposits attached grease - 15% - between 22 ft. - 160 ft.
COL-PWS-4010415	2/27/2019	1:54:18 PM	D	258.88	8	PVC	0000	3100	1	3	Deposits ingress other - 20% - @ 35 ft.
COL-PWS-4010544	2/27/2019	8:05:24 AM	D	6.06	8	PVC	0000	4100	1	4	Obstacles rocks - 30% - @ 6 ft.
COL-PWS-4010713	2/27/2019	8:03:15 AM	D	175.30	8	PVC	0000	3100	1	3	Obstacles construction debris - 20% - @ 39 ft.
COL-PWS-4009203	2/27/2019	10:03:58 AM	D	191.86	8	RPM	0000	2200	1	2	Deposits attached grease - 10% - between 185 ft. - 191 ft.
0	2/27/2019	11:10:39 AM	D	235.13	8	PVC	0000	0000	1	1	
COL-PWS-4008414	2/27/2019	10:54:08 AM	U	173.02	8	RPM	0000	0000	1	1	
COL-PWS-4008811	2/27/2019	9:08:47 AM	U	120.16	8	RPM	0000	0000	1	1	
COL-PWS-4008822	2/27/2019	8:19:00 AM	D	324.05	8	RPM	0000	0000	1	1	
COL-PWS-4009033	2/27/2019	11:25:07 AM	D	282.06	8	RPM	0000	0000	1	1	
COL-PWS-4009044	2/27/2019	11:11:58 AM	D	226.11	8	RPM	0000	0000	1	1	
COL-PWS-4009067	2/27/2019	7:43:38 AM	D	272.12	8	RPM	0000	0000	1	1	
COL-PWS-4009076	2/27/2019	7:33:01 AM	D	187.17	8	RPM	0000	0000	1	1	
COL-PWS-4009089	2/27/2019	8:46:05 AM	U	271.46	8	RPM	0000	0000	1	1	
COL-PWS-4009104	2/27/2019	9:25:23 AM	D	284.20	8	RPM	0000	0000	1	1	
COL-PWS-4009119	2/27/2019	12:04:05 PM	U	232.59	8	RPM	0000	0000	1	1	
COL-PWS-4009143	2/27/2019	11:45:19 AM	D	165.07	8	RPM	0000	0000	1	1	
COL-PWS-4009184	2/27/2019	12:34:00 PM	D	203.12	8	RPM	0000	0000	1	1	
COL-PWS-4009206	2/27/2019	9:48:03 AM	U	332.10	8	RPM	0000	0000	1	1	
COL-PWS-4009228	2/27/2019	12:43:01 PM	D	205.01	8	RPM	0000	0000	1	1	
COL-PWS-4009282	2/27/2019	1:07:01 PM	D	378.61	8	RPM	0000	0000	1	1	
COL-PWS-4009989	2/27/2019	10:38:54 AM	D	363.62	8	PVC	0000	0000	1	1	
COL-PWS-4009990	2/27/2019	10:40:21 AM	D	128.99	8	PVC	0000	0000	1	1	
COL-PWS-4009995	2/27/2019	10:41:17 AM	D	240.59	8	PVC	0000	0000	1	1	
COL-PWS-4009997	2/27/2019	11:58:08 AM	D	168.05	8	RPM	0000	0000	1	1	
COL-PWS-4010000	2/27/2019	12:05:17 PM	D	412.61	8	RPM	0000	0000	1	1	
COL-PWS-4010291	2/27/2019	7:38:57 AM	D	6.06	8	PVC	0000	2100	1	2	Deposits attached other - 10% - @ 6 ft.
COL-PWS-4010293	2/27/2019	1:13:01 PM	D	354.48	8	PVC	0000	0000	1	1	
COL-PWS-4010296	2/27/2019	12:59:25 PM	D	355.47	8	PVC	0000	0000	1	1	
COL-PWS-4010298	2/27/2019	12:45:22 PM	D	155.23	8	PVC	0000	0000	1	1	
COL-PWS-4010625	2/27/2019	8:04:42 AM	D	309.16	8	PVC	0000	0000	1	1	
COL-PWS-4010819	2/27/2019	8:47:48 AM	D	232.74	8	PVC	0000	0000	1	1	
COL-PWS-4010915	2/27/2019	8:47:04 AM	D	219.13	8	PVC	0000	0000	1	1	
COL-PWS-4010993	2/27/2019	8:45:23 AM	D	187.03	8	PVC	0000	0000	1	1	
COL-PWS-4011110	2/27/2019	9:47:44 AM	U	328.44	8	PVC	0000	0000	1	1	
COL-PWS-4010154	2/27/2019	7:42:43 AM	U	36.07	8	PVC	2200	5100	2	5	Deposits attached other - 35% - @ 36 ft. Heavy debris in line. Needs re-cleaning
COL-PWS-4009203	2/27/2019	10:27:51 AM	D	372.12	8	RPM	0000	0000	1	1	
COL-PWS-4010507	2/28/2019	8:31:30 AM	D	355.77	8	RPM	3111	0000	3	1	Medium offset joint @ 223 ft. Water level - sag in pipe - 20% - @ 225 ft.
COL-PWS-4009116	2/28/2019	9:40:47 AM	D	188.83	8	RPM	0000	4100	1	4	Camera underwater @ 136 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4009774	2/28/2019	9:57:31 AM	D	144.80	8	VCP	0000	4800	1	4	Camera underwater between 23 ft. - 61 ft.
COL-PWS-4006933	2/28/2019	11:31:47 AM	D	152.25	8	RPM	0000	0000	1	1	
COL-PWS-4009000	2/28/2019	11:17:15 AM	D	286.08	8	RPM	0000	0000	1	1	
COL-PWS-4009011	2/28/2019	10:48:59 AM	U	316.33	8	RPM	0000	0000	1	1	
COL-PWS-4009091	2/28/2019	12:24:06 PM	D	356.56	15	VCP	0000	0000	1	1	
COL-PWS-4009111	2/28/2019	12:50:48 PM	D	130.12	8	RPM	0000	0000	1	1	
COL-PWS-4009148	2/28/2019	10:36:58 AM	U	187.41	8	RPM	0000	0000	1	1	
COL-PWS-4009223	2/28/2019	12:29:34 PM	U	317.20	8	RPM	0000	0000	1	1	
COL-PWS-4009296	2/28/2019	12:01:59 PM	D	185.12	8	RPM	0000	0000	1	1	
COL-PWS-4009356	2/28/2019	11:48:16 AM	D	318.28	8	RPM	0000	0000	1	1	
COL-PWS-4009500	2/28/2019	9:53:23 AM	D	86.24	8	RPM	0000	0000	1	1	
COL-PWS-4009818	2/28/2019	1:20:37 PM	D	339.97	15	VCP	0000	0000	1	1	
COL-PWS-4010003	2/28/2019	10:03:00 AM	D	307.53	8	VCP	0000	0000	1	1	
COL-PWS-4010352	2/28/2019	8:45:39 AM	D	360.64	8	RPM	0000	0000	1	1	
COL-PWS-4010681	2/28/2019	8:15:57 AM	D	359.35	8	RPM	0000	0000	1	1	
COL-PWS-4010692	2/28/2019	8:10:42 AM	D	12.62	8	RPM	0000	0000	1	1	
COL-PWS-4010712	2/28/2019	9:57:14 AM	D	230.85	8	RPM	0000	0000	1	1	
COL-PWS-4010720	2/28/2019	10:08:26 AM	D	348.02	8	RPM	0000	0000	1	1	
COL-PWS-4017976	2/28/2019	1:33:01 PM	D	355.57	15	VCP	0000	0000	1	1	
COL-PWS-4020921	2/28/2019	11:20:10 AM	D	310.35	8	RPM	0000	0000	1	1	
COL-PWS-4008833	2/28/2019	10:50:01 AM	D	228.93	8	RPM	2300	0000	2	1	Water level - sag in pipe - between 27 ft. - 43 ft.
COL-PWS-4009380	3/4/2019	11:04:37 AM	U	244.76	8	VCP	5100	0000	5	1	Broke pipe - Soil visible - @ 200 ft.
COL-PWS-4009231	3/4/2019	8:40:52 AM	U	25.84	8	RPM	0000	4100	1	4	Camera underwater between 22 ft - 25 ft.
COL-PWS-4009304	3/4/2019	9:44:45 AM	U	244.96	8	RPM	0000	4100	1	4	Camera underwater between 241 ft. - 244 ft.
COL-PWS-4009348	3/4/2019	11:21:56 AM	D	10.43	10	VCP	0000	3100	1	3	Obstacles other - 15% - @ 10 ft. Debris in line.
COL-PWS-4007560	3/4/2019	10:20:39 AM	D	338.28	8	VCP	0000	0000	1	1	
COL-PWS-4009255	3/4/2019	10:33:34 AM	D	48.79	8	RPM	0000	0000	1	1	
COL-PWS-4009281	3/4/2019	1:11:14 PM	D	158.11	8	RPM	0000	0000	1	1	
COL-PWS-4009289	3/4/2019	1:18:22 PM	D	367.80	8	RPM	0000	0000	1	1	
COL-PWS-4009325	3/4/2019	9:02:55 AM	D	371.07	10	VCP	0000	0000	1	1	
COL-PWS-4009336	3/4/2019	9:20:06 AM	D	280.04	10	VCP	0000	0000	1	1	
COL-PWS-4009355	3/4/2019	12:27:36 PM	U	275.76	8	RPM	0000	0000	1	1	
COL-PWS-4009381	3/4/2019	12:54:27 PM	U	284.26	8	RPM	0000	0000	1	1	
COL-PWS-4009435	3/4/2019	12:02:10 PM	U	92.30	8	RPM	0000	0000	1	1	
COL-PWS-4009438	3/4/2019	12:12:25 PM	D	291.13	8	RPM	0000	0000	1	1	
COL-PWS-4009461	3/4/2019	7:41:28 AM	U	256.14	8	RPM	0000	0000	1	1	
COL-PWS-4009546	3/4/2019	7:21:07 AM	U	286.21	8	RPM	0000	0000	1	1	
COL-PWS-4009548	3/4/2019	7:56:21 AM	D	295.08	8	RPM	0000	0000	1	1	
COL-PWS-4009654	3/4/2019	11:40:55 AM	D	217.19	8	RPM	0000	0000	1	1	
COL-PWS-4009993	3/4/2019	1:44:10 PM	D	226.18	24	VCP	0000	0000	1	1	
COL-PWS-4010076	3/4/2019	1:31:54 PM	D	271.89	24	VCP	0000	0000	1	1	
COL-PWS-4010091	3/4/2019	1:27:18 PM	D	69.07	24	VCP	0000	0000	1	1	
COL-PWS-4010224	3/4/2019	12:47:32 PM	D	313.14	15	VCP	0000	2100	1	2	Deposits attached grease - 5% - @ 303 ft.
COL-PWS-4010346	3/4/2019	12:34:40 PM	D	302.60	15	VCP	0000	0000	1	1	
COL-PWS-4010433	3/4/2019	12:26:33 PM	D	175.90	15	VCP	0000	0000	1	1	
COL-PWS-4009304	3/4/2019	8:01:44 AM	D	103.95	8	RPM	0000	3100	1	3	Obstacles other - 15% - @ 102 ft. Deposits in line.
COL-PWS-2000608	3/5/2019	7:43:54 AM	D	252.92	8	VCP	0000	3G00	1	3	Medium roots at joint throughout line.
COL-PWS-2001242	3/5/2019	7:43:54 AM	D	130.87	10	VCP	3100	0000	3	1	Fracture @ 88 ft.
COL-PWS-4010250	3/5/2019	10:31:20 AM	D	298.43	12	VCP	0000	2R00	1	2	Deposits attached grease - 5% - between 39 ft. - 281 ft.
COL-PWS-2001486	3/5/2019	7:43:54 AM	D	243.31	8	PVC	0000	3100	1	3	Tap rehabilitated intruding - @ 210 ft.
COL-PWS-2000886	3/5/2019	7:43:54 AM	D	176.06	8	PVC	0000	3100	1	3	Medium roots at joint @ 87 ft.
COL-PWS-2001361	3/5/2019	7:43:54 AM	D	237.04	8	PVC	0000	3100	1	3	Medium roots at joint @ 85 ft.
COL-PWS-2001364	3/5/2019	7:43:54 AM	D	226.55	8	VCP	0000	4131	1	4	Medium roots @ 77 ft. & 208 ft.
COL-PWS-2000476	3/5/2019	7:43:54 AM	U	254.29	8	PVC	1200	0000	1	1	Medium separated joint @ 111 ft. & 201 ft.
COL-PWS-2000545	3/5/2019	7:43:54 AM	U	112.93	8	VCP	0000	0000	1	1	
COL-PWS-2000640	3/5/2019	7:43:54 AM	D	354.58	8	PVC	0000	0000	1	1	
COL-PWS-2001415	3/5/2019	7:43:54 AM	D	192.24	8	PVC	0000	0000	1	1	
COL-PWS-2001452	3/5/2019	7:43:54 AM	D	279.98	8	VCP	0000	1200	1	1	Vermin cockroach @ 0 ft. & 279 ft.
COL-PWS-2001479	3/5/2019	7:43:54 AM	D	98.72	8	PVC	0000	0000	1	1	
COL-PWS-2001497	3/5/2019	7:43:54 AM	D	206.16	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-2001505	3/5/2019	7:43:54 AM	D	236.35	8	VCP	0000	1100	1	1	Vermin cockroach @ 236 ft.
COL-PWS-2001533	3/5/2019	7:43:54 AM	U	118.91	12	VCP	0000	0000	1	1	
COL-PWS-2001613	3/5/2019	7:43:54 AM	U	224.20	8	VCP	0000	0000	1	1	
COL-PWS-2020366	3/5/2019	7:43:54 AM	D	206.85	10	VCP	0000	0000	1	1	
COL-PWS-4009866	3/5/2019	8:25:32 AM	D	337.68	12	VCP	0000	0000	1	1	
COL-PWS-4009901	3/5/2019	8:11:33 AM	D	352.09	12	VCP	0000	0000	1	1	
COL-PWS-4009944	3/5/2019	9:14:11 AM	D	364.61	12	VCP	0000	0000	1	1	
COL-PWS-4010021	3/5/2019	9:01:29 AM	D	298.03	12	VCP	0000	0000	1	1	
COL-PWS-4010366	3/5/2019	10:06:09 AM	D	253.31	12	VCP	0000	2600	1	2	Deposits attached grease - 5% - between 175 ft. - 198 ft.
COL-PWS-4010469	3/5/2019	11:50:19 AM	D	44.92	8	VCP	0000	0000	1	1	
COL-PWS-4010488	3/5/2019	9:54:17 AM	D	211.08	12	VCP	0000	0000	1	1	
COL-PWS-4010647	3/5/2019	11:34:01 AM	D	333.41	8	VCP	0000	0000	1	1	
COL-PWS-4010676	3/5/2019	12:17:27 PM	D	148.77	8	VCP	0000	0000	1	1	
COL-PWS-4010693	3/5/2019	12:36:51 PM	U	78.81	8	PVC	0000	0000	1	1	
COL-PWS-4010779	3/5/2019	12:55:55 PM	D	353.68	8	PVC	0000	0000	1	1	
COL-PWS-4010812	3/5/2019	11:18:39 AM	D	352.19	8	VCP	0000	0000	1	1	
COL-PWS-4010523	3/5/2019	1:42:04 PM	D	200.05	8	RPM	2300	0000	2	1	Water level - sag in pipe - 30% - between 108 ft. - 122 ft.
COL-PWS-4010629	3/5/2019	1:17:58 PM	D	250.83	8	RPM	2400	0000	2	1	Water level - sag in pipe - 30% - between 133 ft. - 154 ft.
COL-PWS-4010006	3/6/2019	7:33:20 AM	D	291.87	8	RPM	5131	0000	5	1	Deformed horizontal - 15% - @ 206 ft. Multiple cracks throughout line.
COL-PWS-4010841	3/6/2019	11:06:22 AM	D	156.30	8	VCP	3100	5122	3	5	Obstacles pipe material - 50% - @ 156 ft. Fracture @ 151 ft. Deposits attached grease - 5% - @ 148 ft. Fine roots @ 151 ft.
COL-PWS-4010020	3/6/2019	10:15:33 AM	D	48.10	8	RPM	0000	5131	1	5	Obstacles construction debris - 35% - @ 0 ft. Obstacles other - 20% - @ 43 ft.
COL-PWS-4011197	3/6/2019	10:29:04 AM	D	354.44	8	VCP	0000	4100	1	4	Deposits attached ragging - 25% - @ 30 ft.
COL-PWS-4010001	3/6/2019	10:46:57 AM	U	114.28	8	RPM	0000	0000	1	1	
COL-PWS-4010961	3/6/2019	12:18:34 PM	D	353.66	8	VCP	0000	0000	1	1	
COL-PWS-4009750	3/6/2019	11:02:23 AM	D	350.60	8	RPM	0000	0000	1	1	
COL-PWS-4009888	3/6/2019	11:19:11 AM	D	335.99	8	RPM	0000	0000	1	1	
COL-PWS-4010004	3/6/2019	7:25:48 AM	D	247.75	8	RPM	0000	0000	1	1	
COL-PWS-4010007	3/6/2019	7:58:44 AM	D	231.25	8	RPM	0000	0000	1	1	
COL-PWS-4010009	3/6/2019	8:09:20 AM	D	235.52	8	RPM	0000	0000	1	1	
COL-PWS-4010015	3/6/2019	9:58:22 AM	D	243.17	8	RPM	0000	0000	1	1	
COL-PWS-4010019	3/6/2019	10:07:11 AM	D	170.23	8	RPM	0000	0000	1	1	
COL-PWS-4010164	3/6/2019	9:27:04 AM	U	344.44	8	RPM	0000	0000	1	1	
COL-PWS-4010803	3/6/2019	11:25:09 AM	U	348.88	8	VCP	0000	0000	1	1	
COL-PWS-4010882	3/6/2019	9:08:11 AM	U	143.72	8	VCP	0000	0000	1	1	
COL-PWS-4010930	3/6/2019	9:32:58 AM	D	269.41	8	VCP	0000	2300	1	2	Deposits attached grease - 5% - between 106 ft. - 123 ft.
COL-PWS-4010997	3/6/2019	12:35:04 PM	D	367.31	8	VCP	0000	0000	1	1	
COL-PWS-4011170	3/6/2019	1:00:06 PM	D	349.07	8	VCP	0000	0000	1	1	
COL-PWS-4011171	3/6/2019	1:30:35 PM	D	351.02	8	VCP	0000	0000	1	1	
COL-PWS-4011175	3/6/2019	1:56:32 PM	D	341.08	8	VCP	0000	0000	1	1	
COL-PWS-4010001	3/6/2019	8:56:19 AM	D	102.06	8	RPM	0000	0000	1	1	
COL-PWS-4011010	3/6/2019	10:10:40 AM	D	45.63	8	VCP	0000	2900	1	2	Deposits attached grease - 10% - between 8 ft. - 45 ft.
COL-PWS-4010646	3/7/2019	1:50:03 PM	U	244.17	8	RPM	4100	0000	4	1	Fracture @ 8 ft.
COL-PWS-4010719	3/7/2019	10:19:46 AM	D	275.05	8	PVC	0000	4100	1	4	Infiltration runner - @ 273 ft.
COL-PWS-4010163	3/7/2019	11:59:04 AM	D	97.09	8	RPM	0000	3200	1	3	Deposits settled compacted - 20% - @ 32 ft. Obstacles other - 20% - @ 97 ft.
COL-PWS-4009651	3/7/2019	7:29:32 AM	D	364.16	8	RPM	0000	0000	1	1	
COL-PWS-4010128	3/7/2019	11:07:31 AM	U	213.03	8	PVC	0000	0000	1	1	
COL-PWS-4010139	3/7/2019	8:05:37 AM	D	231.85	8	RPM	0000	0000	1	1	
COL-PWS-4010155	3/7/2019	8:17:08 AM	D	226.68	8	RPM	0000	0000	1	1	
COL-PWS-4010159	3/7/2019	8:29:06 AM	D	223.00	8	RPM	0000	0000	1	1	
COL-PWS-4010193	3/7/2019	10:43:21 AM	U	233.33	8	PVC	0000	0000	1	1	
COL-PWS-4010220	3/7/2019	8:42:38 AM	U	196.67	8	RPM	0000	0000	1	1	
COL-PWS-4010221	3/7/2019	11:24:10 AM	D	287.33	8	PVC	0000	0000	1	1	
COL-PWS-4010262	3/7/2019	9:14:24 AM	D	257.19	8	RPM	0000	0000	1	1	
COL-PWS-4010265	3/7/2019	11:32:37 AM	D	258.08	8	RPM	1100	2400	1	2	Deposits attached grease - 5% - between 247 ft. - 258 ft.
COL-PWS-4010299	3/7/2019	8:43:40 AM	U	206.21	8	RPM	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4010327	3/7/2019	11:57:05 AM	D	226.24	8	PVC	0000	0000	1	1	
COL-PWS-4010339	3/7/2019	11:38:49 AM	D	190.13	8	PVC	0000	0000	1	1	
COL-PWS-4010383	3/7/2019	10:58:52 AM	D	257.48	8	RPM	0000	0000	1	1	
COL-PWS-4010386	3/7/2019	9:13:28 AM	D	263.75	8	RPM	0000	0000	1	1	
COL-PWS-4010392	3/7/2019	12:10:46 PM	D	256.09	8	RPM	0000	0000	1	1	
COL-PWS-4010393	3/7/2019	12:11:39 PM	D	354.08	8	RPM	0000	0000	1	1	
COL-PWS-4010448	3/7/2019	9:11:52 AM	U	292.16	8	RPM	0000	0000	1	1	
COL-PWS-4010450	3/7/2019	8:45:02 AM	D	301.25	8	PVC	0000	0000	1	1	
COL-PWS-4010453	3/7/2019	8:24:50 AM	U	302.63	8	PVC	0000	0000	1	1	
COL-PWS-4010506	3/7/2019	9:12:01 AM	D	259.97	8	RPM	0000	0000	1	1	
COL-PWS-4010516	3/7/2019	10:40:09 AM	D	277.76	8	RPM	0000	1200	1	1	Fine roots at joint @ 176 ft. & 177 ft.
COL-PWS-4010567	3/7/2019	8:05:18 AM	U	256.05	8	PVC	0000	0000	1	1	
COL-PWS-4010584	3/7/2019	9:47:18 AM	D	224.19	8	PVC	0000	0000	1	1	
COL-PWS-4010587	3/7/2019	10:01:03 AM	D	192.01	8	PVC	0000	0000	1	1	
COL-PWS-4010703	3/7/2019	1:10:27 PM	D	277.05	8	RPM	0000	0000	1	1	
COL-PWS-4010722	3/7/2019	9:30:10 AM	U	265.45	8	PVC	0000	0000	1	1	
COL-PWS-4010740	3/7/2019	12:43:44 PM	U	276.56	8	RPM	0000	0000	1	1	
COL-PWS-4010768	3/7/2019	1:11:11 PM	D	349.31	8	RPM	0000	0000	1	1	
COL-PWS-4010837	3/7/2019	12:27:11 PM	U	294.19	8	PVC	0000	0000	1	1	
COL-PWS-4010787	3/7/2019	1:24:01 PM	D	96.69	8	RPM	1100	0000	1	1	Medium offset joint.
COL-PWS-4007326	3/8/2019	11:07:34 AM	U	208.86	8	VCP	1100	2G00	1	2	Deposits attached encrustation - 10% - between 7 ft. - 208 ft. Surface roughness increased chemical - @ 207 ft.
COL-PWS-4007616	3/8/2019	7:37:42 AM	D	153.04	8	PVC	0000	0000	1	1	
COL-PWS-4007894	3/8/2019	9:12:53 AM	D	225.24	8	PVC	0000	0000	1	1	
COL-PWS-4007916	3/8/2019	9:43:13 AM	D	137.12	8	PVC	0000	0000	1	1	
COL-PWS-4007938	3/8/2019	9:34:43 AM	D	100.70	8	PVC	0000	0000	1	1	
COL-PWS-4007958	3/8/2019	10:15:06 AM	D	220.07	8	PVC	0000	0000	1	1	
COL-PWS-4007969	3/8/2019	9:24:39 AM	D	249.23	8	PVC	0000	0000	1	1	
COL-PWS-4008196	3/8/2019	8:11:41 AM	U	300.18	8	PVC	0000	0000	1	1	
COL-PWS-4009100	3/8/2019	8:39:02 AM	U	242.18	8	PVC	0000	0000	1	1	
COL-PWS-4009107	3/8/2019	7:59:36 AM	D	235.24	8	PVC	0000	0000	1	1	
COL-PWS-4009186	3/8/2019	8:53:17 AM	D	40.09	8	PVC	0000	0000	1	1	
COL-PWS-4009197	3/8/2019	8:57:42 AM	D	131.17	8	PVC	0000	0000	1	1	
COL-PWS-4009494	3/8/2019	8:53:50 AM	D	160.00	8	PVC	0000	0000	1	1	
COL-PWS-4009513	3/8/2019	8:31:42 AM	D	211.57	8	PVC	0000	0000	1	1	
COL-PWS-4009631	3/8/2019	7:26:37 AM	D	311.65	8	RPM	0000	0000	1	1	
COL-PWS-4009653	3/8/2019	1:23:15 PM	D	308.04	8	VCP	0000	0000	1	1	
COL-PWS-4009749	3/8/2019	7:28:15 AM	D	332.12	8	PVC	0000	0000	1	1	
COL-PWS-4009803	3/8/2019	1:01:19 PM	D	405.01	8	VCP	0000	0000	1	1	
COL-PWS-4009835	3/8/2019	11:13:14 AM	D	228.07	8	RPM	0000	0000	1	1	
COL-PWS-4009838	3/8/2019	12:58:19 PM	U	5.06	8	VCP	0000	0000	1	1	
COL-PWS-4009839	3/8/2019	12:39:48 PM	U	387.02	8	VCP	0000	0000	1	1	
COL-PWS-4009926	3/8/2019	12:41:44 PM	D	240.19	8	RPM	0000	0000	1	1	
COL-PWS-4010113	3/8/2019	9:12:21 AM	D	235.62	8	RPM	0000	0000	1	1	
COL-PWS-4010120	3/8/2019	9:38:09 AM	D	232.34	8	RPM	0000	0000	1	1	
COL-PWS-4010187	3/8/2019	10:36:49 AM	U	220.72	8	RPM	0000	0000	1	1	
COL-PWS-4010209	3/8/2019	10:25:11 AM	U	236.42	8	RPM	0000	0000	1	1	
COL-PWS-4010216	3/8/2019	9:37:09 AM	D	236.02	8	RPM	0000	0000	1	1	
COL-PWS-4010391	3/8/2019	1:10:23 PM	D	340.17	8	VCP	0000	0000	1	1	
COL-PWS-4010484	3/8/2019	1:23:40 PM	D	339.67	8	VCP	0000	0000	1	1	
COL-PWS-4011924	3/8/2019	11:59:43 AM	D	450.25	12	VCP	0000	0000	1	1	
COL-PWS-4010742	3/8/2019	11:42:30 AM	D	431.31	12	VCP	2500	0000	2	1	Water level - sag in pipe - 30% - between 224 ft. - 252 ft.
COL-PWS-4007326	3/8/2019	10:25:52 AM	U	227.02	8	PVC	0000	0000	1	1	
COL-PWS-4009335	3/11/2019	12:38:24 PM	D	337.92	8	PVC	3100	0000	3	1	Water level - sag in pipe - 40% - @ 330 ft.
COL-PWS-4010397	3/11/2019	1:31:16 PM	U	226.09	8	RPM	4123	0000	4	1	Water level - sag in pipe - 20% - between 14 ft. - 28 ft. Hole in pipe @ 120 ft.
COL-PWS-4010286	3/11/2019	12:43:22 PM	D	264.24	8	RPM	0000	3100	1	3	Deposits attached grease - 15% - @ 63 ft.
COL-PWS-4010425	3/11/2019	11:25:20 AM	U	312.70	8	RPM	0000	4400	1	4	Camera underwater - between 230 ft. - 249 ft.
COL-PWS-4011048	3/11/2019	7:51:57 AM	D	353.09	8	VCP	0000	0000	1	1	
COL-PWS-4008758	3/11/2019	8:18:41 AM	U	212.08	8	PVC	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4009086	3/11/2019	8:47:35 AM	D	154.29	8	PVC	0000	0000	1	1	
COL-PWS-4009101	3/11/2019	9:06:50 AM	D	347.50	8	PVC	0000	0000	1	1	
COL-PWS-4009109	3/11/2019	9:25:48 AM	D	253.14	8	PVC	0000	0000	1	1	
COL-PWS-4009195	3/11/2019	9:53:54 AM	D	262.14	8	PVC	0000	0000	1	1	
COL-PWS-4009262	3/11/2019	10:49:40 AM	D	254.12	8	PVC	0000	0000	1	1	
COL-PWS-4009286	3/11/2019	11:06:07 AM	D	217.36	8	PVC	0000	0000	1	1	
COL-PWS-4009291	3/11/2019	10:10:47 AM	D	145.20	8	PVC	0000	0000	1	1	
COL-PWS-4009521	3/11/2019	2:00:22 PM	D	196.63	8	PVC	0000	0000	1	1	
COL-PWS-4009607	3/11/2019	1:31:43 PM	D	247.08	8	PVC	0000	0000	1	1	
COL-PWS-4009647	3/11/2019	3:03:42 PM	D	257.25	8	PVC	0000	0000	1	1	
COL-PWS-4009650	3/11/2019	1:17:59 PM	U	227.33	8	PVC	0000	0000	1	1	
COL-PWS-4009734	3/11/2019	3:23:19 PM	D	143.15	8	PVC	0000	0000	1	1	
COL-PWS-4009776	3/11/2019	3:35:58 PM	D	233.30	8	PVC	0000	0000	1	1	
COL-PWS-4009832	3/11/2019	4:00:16 PM	D	295.58	8	PVC	0000	0000	1	1	
COL-PWS-4010233	3/11/2019	10:21:25 AM	D	242.46	8	RPM	0000	0000	1	1	
COL-PWS-4010256	3/11/2019	10:12:54 AM	D	78.61	8	RPM	0000	0000	1	1	
COL-PWS-4010269	3/11/2019	1:02:20 PM	D	191.76	8	RPM	0000	0000	1	1	
COL-PWS-4010270	3/11/2019	12:56:54 PM	D	103.17	8	RPM	0000	0000	1	1	
COL-PWS-4010295	3/11/2019	1:42:42 PM	D	265.17	8	RPM	0000	0000	1	1	
COL-PWS-4010326	3/11/2019	11:52:07 AM	U	107.13	8	RPM	0000	0000	1	1	
COL-PWS-4010338	3/11/2019	11:58:02 AM	U	182.20	8	RPM	0000	0000	1	1	
COL-PWS-4010394	3/11/2019	2:06:27 PM	D	275.16	8	RPM	0000	0000	1	1	
COL-PWS-4010399	3/11/2019	9:58:30 AM	U	296.25	8	RPM	0000	0000	1	1	
COL-PWS-4010402	3/11/2019	12:09:29 PM	U	136.83	8	RPM	0000	0000	1	1	
COL-PWS-4010412	3/11/2019	10:33:13 AM	D	148.02	8	RPM	0000	0000	1	1	
COL-PWS-4010423	3/11/2019	10:49:31 AM	D	244.24	8	RPM	0000	0000	1	1	
COL-PWS-4010446	3/11/2019	11:01:14 AM	D	240.04	8	RPM	0000	0000	1	1	
COL-PWS-4010498	3/11/2019	11:12:34 AM	D	100.08	8	RPM	0000	0000	1	1	
COL-PWS-4010519	3/11/2019	9:32:23 AM	D	355.05	8	RPM	0000	0000	1	1	
COL-PWS-4010553	3/11/2019	9:10:43 AM	U	173.09	8	RPM	0000	0000	1	1	
COL-PWS-4010557	3/11/2019	9:04:12 AM	U	72.12	8	RPM	0000	0000	1	1	
COL-PWS-4010710	3/11/2019	8:16:20 AM	U	360.11	8	RPM	0000	0000	1	1	
COL-PWS-4011042	3/11/2019	9:21:03 AM	D	215.25	8	VCP	0000	0000	1	1	
COL-PWS-4011044	3/11/2019	7:50:21 AM	D	357.06	8	VCP	0000	0000	1	1	
COL-PWS-4011053	3/11/2019	1:40:45 PM	D	154.23	8	VCP	0000	0000	1	1	
COL-PWS-4011159	3/11/2019	9:30:41 AM	D	255.40	8	VCP	0000	0000	1	1	
COL-PWS-4011265	3/11/2019	1:27:49 PM	D	270.30	8	VCP	0000	0000	1	1	
COL-PWS-4011298	3/11/2019	9:42:32 AM	D	353.88	8	VCP	0000	0000	1	1	
COL-PWS-4011448	3/11/2019	10:41:48 AM	D	322.97	8	VCP	0000	0000	1	1	
COL-PWS-4011452	3/11/2019	11:31:03 AM	D	395.42	8	VCP	0000	0000	1	1	
COL-PWS-4011479	3/11/2019	10:27:53 AM	D	318.70	8	VCP	0000	0000	1	1	
COL-PWS-4011489	3/11/2019	10:18:49 AM	D	228.86	8	VCP	0000	0000	1	1	
COL-PWS-4011678	3/11/2019	12:29:38 PM	D	303.10	8	VCP	0000	0000	1	1	
COL-PWS-4011681	3/11/2019	11:44:42 AM	D	383.40	8	VCP	0000	0000	1	1	
COL-PWS-4011703	3/11/2019	12:15:35 PM	D	349.11	8	VCP	0000	0000	1	1	
COL-PWS-4011928	3/11/2019	12:47:09 PM	D	363.32	8	VCP	0000	2400	1	2	Deposits attached other - 5% - between 339 ft. - 357 ft.
COL-PWS-4009451	3/11/2019	2:32:30 PM	D	350.14	8	PVC	2200	0000	2	1	Water level - sag in pipe - 5% - between 27 ft. - 143 ft.
COL-PWS-4010559	3/11/2019	8:38:27 AM	D	280.04	8	RPM	2A00	0000	2	1	Water level - sag in pipe - 30% - between 160 ft. - 218 ft.
COL-PWS-4011048	3/11/2019	1:41:45 PM	U	51.48	8	VCP	0000	0000	1	1	
COL-PWS-2002604	3/12/2019	7:35:31 AM	D	246.79	24	VCP	3100	0000	3	1	Surface aggregate visible @ 246 ft.
COL-PWS-2000628	3/12/2019	2:18:16 PM	D	327.62	8	VCP	0000	3200	1	3	Medium roots at joint @ 25 ft. & 54 ft.
COL-PWS-2000711	3/12/2019	2:57:20 PM	D	301.98	8	VCP	0000	4500	1	4	Medium roots barrel between 68 ft. - 86 ft. & at 112 ft.
COL-PWS-2000536	3/12/2019	2:07:01 PM	U	152.60	8	VCP	0000	0000	1	1	
COL-PWS-2002265	3/12/2019	1:03:30 PM	D	148.70	8	VCP	0000	0000	1	1	
COL-PWS-2002427	3/12/2019	12:55:09 PM	U	244.64	8	VCP	0000	0000	1	1	
COL-PWS-2002469	3/12/2019	8:41:30 AM	D	442.39	24	VCP	0000	0000	1	1	
COL-PWS-2020293	3/12/2019	8:13:31 AM	D	444.14	24	VCP	0000	0000	1	1	
COL-PWS-4009118	3/12/2019	8:32:18 AM	D	192.33	8	PVC	0000	0000	1	1	
COL-PWS-4009791	3/12/2019	12:43:57 PM	D	304.09	8	PVC	0000	0000	1	1	
COL-PWS-4009913	3/12/2019	1:36:35 PM	D	320.41	8	PVC	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4009914	3/12/2019	1:20:25 PM	D	192.13	8	PVC	0000	0000	1	1	
COL-PWS-4009973	3/12/2019	11:06:42 AM	D	139.04	8	PVC	0000	0000	1	1	
COL-PWS-4010144	3/12/2019	10:40:03 AM	D	156.05	8	PVC	0000	0000	1	1	
COL-PWS-4010158	3/12/2019	9:49:34 AM	U	32.17	8	PVC	0000	0000	1	1	
COL-PWS-4010247	3/12/2019	11:52:42 AM	D	206.70	8	PVC	0000	0000	1	1	
COL-PWS-4010248	3/12/2019	9:36:28 AM	D	221.27	8	PVC	0000	0000	1	1	
COL-PWS-4010263	3/12/2019	11:35:30 AM	D	189.10	8	PVC	0000	0000	1	1	
COL-PWS-4010343	3/12/2019	3:26:29 PM	D	224.10	8	PVC	0000	0000	1	1	
COL-PWS-4010416	3/12/2019	9:15:14 AM	D	365.10	8	PVC	0000	0000	1	1	
COL-PWS-4010419	3/12/2019	2:56:59 PM	D	194.09	8	PVC	0000	0000	1	1	
COL-PWS-4010497	3/12/2019	2:29:24 PM	D	271.13	8	PVC	0000	0000	1	1	
COL-PWS-4010535	3/12/2019	2:21:13 PM	U	68.44	8	PVC	0000	0000	1	1	
COL-PWS-4010664	3/12/2019	10:24:38 AM	D	181.46	8	PVC	0000	0000	1	1	
COL-PWS-4010729	3/12/2019	8:25:29 AM	U	257.68	8	PVC	0000	0000	1	1	
COL-PWS-4010773	3/12/2019	9:29:20 AM	D	232.34	8	PVC	0000	0000	1	1	
COL-PWS-4010845	3/12/2019	7:19:21 AM	D	204.02	8	PVC	0000	0000	1	1	
COL-PWS-4010854	3/12/2019	9:21:12 AM	D	171.82	8	PVC	0000	0000	1	1	
COL-PWS-4010901	3/12/2019	10:10:52 AM	U	273.39	8	PVC	0000	0000	1	1	
COL-PWS-4010903	3/12/2019	7:22:41 AM	D	356.86	8	PVC	0000	0000	1	1	
COL-PWS-4010923	3/12/2019	9:40:25 AM	U	133.46	8	PVC	0000	0000	1	1	
COL-PWS-4011006	3/12/2019	8:10:05 AM	D	357.66	8	PVC	0000	0000	1	1	
COL-PWS-4011416	3/12/2019	1:04:45 PM	D	405.56	8	PVC	0000	0000	1	1	
COL-PWS-4011457	3/12/2019	12:09:18 PM	D	230.45	8	PVC	0000	0000	1	1	
COL-PWS-4011472	3/12/2019	1:22:24 PM	D	356.86	8	PVC	0000	0000	1	1	
COL-PWS-4011579	3/12/2019	12:18:38 PM	D	305.38	8	PVC	0000	0000	1	1	
COL-PWS-4011643	3/12/2019	2:01:19 PM	D	355.77	8	PVC	0000	0000	1	1	
COL-PWS-4011664	3/12/2019	1:23:28 PM	D	266.83	8	PVC	0000	0000	1	1	
COL-PWS-4011752	3/12/2019	10:47:36 AM	D	305.38	8	PVC	0000	0000	1	1	
COL-PWS-4011777	3/12/2019	11:01:26 AM	D	294.95	8	PVC	0000	0000	1	1	
COL-PWS-4011795	3/12/2019	11:02:25 AM	D	175.70	8	PVC	1100	0000	1	1	Joint angular medium - @ 104 ft.
COL-PWS-4011806	3/12/2019	11:20:37 AM	D	356.27	8	PVC	0000	0000	1	1	
COL-PWS-4009865	3/12/2019	7:43:53 AM	D	330.29	8	PVC	2100	0000	2	1	Water level - sag in pipe - 10% - @ 77 ft.
COL-PWS-4010081	3/12/2019	10:51:56 AM	D	234.08	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - between 207 ft. - 225 ft.
COL-PWS-4010304	3/12/2019	3:39:21 PM	D	290.01	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - @ 35 ft.
COL-PWS-3001675	3/13/2019	2:21:03 PM	D	54.02	8	VCP	4131	0000	4	1	Fracture @ 39 ft., 44 ft. & 48 ft.
COL-PWS-3001584	3/13/2019	10:10:14 AM	U	153.87	8	VCP	5244	3100	5	3	Broken pipe @ 31 ft. Fracture @ 45 ft., 63 ft. 85 ft. & 109 ft. Hole soil visible @ 148 ft.
COL-PWS-3001905	3/13/2019	12:44:49 PM	D	275.36	8	VCP	3200	0000	3	1	Fractures @ 168 ft.
COL-PWS-4010377	3/13/2019	11:02:54 AM	D	251.29	8	PVC	3121	0000	3	1	Cracks @ 47 ft. Separated joint - large - @ 160 ft.
COL-PWS-3001665	3/13/2019	11:32:45 AM	U	99.75	8	VCP	5141	0000	5	1	Broken pipe @ 3 ft. Fractures @ 22 ft.
COL-PWS-4012043	3/13/2019	9:53:44 AM	D	401.88	8	VCP	0000	3A00	1	3	Obstacles other - 15% - between 148 ft. - 202 ft.
COL-PWS-3001372	3/13/2019	9:14:27 AM	U	84.05	8	VCP	0000	3121	1	3	Medium roots in connection - 10 o'clock - @ 37 ft.
COL-PWS-3001392	3/13/2019	8:26:05 AM	U	131.93	8	VCP	0000	1100	1	1	Fine roots at joint @ 124 ft.
COL-PWS-3001460	3/13/2019	9:47:59 AM	D	216.37	8	VCP	0000	0000	1	1	
COL-PWS-3001474	3/13/2019	8:40:42 AM	D	295.35	8	VCP	0000	1100	1	1	
COL-PWS-3001481	3/13/2019	10:22:23 AM	U	249.03	8	VCP	1100	0000	1	1	Medium offset joint @ 4 ft.
COL-PWS-3001575	3/13/2019	9:04:00 AM	D	140.90	8	VCP	0000	2111	1	2	Tap Break-in - 12 o'clock - @ 39 ft. Fine roots at joint @ 115 ft.
COL-PWS-3001629	3/13/2019	11:03:32 AM	D	141.77	8	VCP	0000	0000	1	1	
COL-PWS-3001670	3/13/2019	11:23:58 AM	U	131.63	8	VCP	0000	0000	1	1	
COL-PWS-3001722	3/13/2019	11:50:09 AM	D	148.50	8	VCP	0000	0000	1	1	
COL-PWS-3001736	3/13/2019	11:19:23 AM	U	64.65	8	VCP	0000	0000	1	1	
COL-PWS-3001820	3/13/2019	12:43:33 PM	U	162.54	8	VCP	0000	0000	1	1	
COL-PWS-3001886	3/13/2019	12:25:51 PM	D	268.73	8	VCP	0000	0000	1	1	
COL-PWS-3001904	3/13/2019	1:16:06 PM	D	277.50	8	VCP	0000	0000	1	1	
COL-PWS-3001939	3/13/2019	12:18:52 PM	U	152.79	8	VCP	0000	0000	1	1	
COL-PWS-4010012	3/13/2019	3:40:20 PM	D	198.29	8	VCP	0000	2200	1	2	Intruding sealing ring broken - 5% - @ 71 ft. Intruding sealing other - 5% - @ 175 ft.
COL-PWS-4010089	3/13/2019	3:12:53 PM	U	79.00	8	PVC	0000	0000	1	1	
COL-PWS-4010117	3/13/2019	3:25:16 PM	D	293.33	8	PVC	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4010121	3/13/2019	2:32:35 PM	D	335.37	8	PVC	0000	0000	1	1	
COL-PWS-4010205	3/13/2019	2:18:48 PM	D	236.52	8	PVC	0000	2100	1	2	Deposits attached grease - 5% - between 212 ft. - 233 ft.
COL-PWS-4010222	3/13/2019	7:36:39 AM	U	152.24	8	PVC	0000	0000	1	1	
COL-PWS-4010227	3/13/2019	2:03:58 PM	U	84.09	8	PVC	0000	0000	1	1	
COL-PWS-4010232	3/13/2019	8:23:49 AM	D	193.11	8	PVC	0000	0000	1	1	
COL-PWS-4010311	3/13/2019	12:18:55 PM	D	62.38	8	PVC	0000	0000	1	1	
COL-PWS-4010313	3/13/2019	1:45:30 PM	D	239.26	8	PVC	0000	0000	1	1	
COL-PWS-4010372	3/13/2019	10:41:11 AM	D	213.35	8	PVC	0000	0000	1	1	
COL-PWS-4010376	3/13/2019	1:32:14 PM	U	133.17	8	PVC	0000	0000	1	1	
COL-PWS-4010411	3/13/2019	11:24:00 AM	D	240.34	8	PVC	0000	0000	1	1	
COL-PWS-4010426	3/13/2019	10:04:35 AM	D	279.25	8	PVC	0000	0000	1	1	
COL-PWS-4010517	3/13/2019	9:17:13 AM	D	249.82	8	PVC	0000	0000	1	1	
COL-PWS-4010528	3/13/2019	9:38:12 AM	D	278.08	8	PVC	0000	0000	1	1	
COL-PWS-4010530	3/13/2019	9:05:10 AM	D	215.21	8	PVC	0000	0000	1	1	
COL-PWS-4011402	3/13/2019	10:36:15 AM	D	283.42	8	PVC	0000	0000	1	1	
COL-PWS-4011414	3/13/2019	10:35:24 AM	D	276.47	8	PVC	0000	0000	1	1	
COL-PWS-4011497	3/13/2019	1:03:35 PM	D	322.78	8	VCP	0000	2211	1	2	Deposits attached grease - 5% - @ 31 ft. Roots @ 42 ft. & 78 ft.
COL-PWS-4011537	3/13/2019	10:34:29 AM	D	276.96	8	PVC	0000	0000	1	1	
COL-PWS-4011654	3/13/2019	10:33:50 AM	D	285.31	8	PVC	0000	0000	1	1	
COL-PWS-4011677	3/13/2019	1:04:52 PM	D	163.67	8	VCP	0000	0000	1	1	
COL-PWS-4011728	3/13/2019	10:33:04 AM	D	173.71	8	PVC	0000	0000	1	1	
COL-PWS-4011748	3/13/2019	2:30:25 PM	D	167.05	8	VCP	0000	0000	1	1	
COL-PWS-4011782	3/13/2019	10:31:51 AM	D	111.80	8	PVC	0000	0000	1	1	
COL-PWS-4011821	3/13/2019	7:21:39 AM	D	459.32	8	PVC	0000	0000	1	1	
COL-PWS-4011842	3/13/2019	2:23:54 PM	D	192.00	8	VCP	0000	0000	1	1	
COL-PWS-4011883	3/13/2019	12:51:44 PM	D	187.13	8	PVC	0000	0000	1	1	
COL-PWS-4011929	3/13/2019	2:16:57 PM	D	177.39	8	VCP	0000	0000	1	1	
COL-PWS-4011954	3/13/2019	8:22:34 AM	D	314.23	8	PVC	0000	0000	1	1	
COL-PWS-4011959	3/13/2019	7:28:08 AM	D	356.17	8	VCP	0000	0000	1	1	
COL-PWS-4011972	3/13/2019	8:21:20 AM	D	310.45	8	PVC	0000	0000	1	1	
COL-PWS-4011978	3/13/2019	8:23:31 AM	D	264.14	8	PVC	0000	0000	1	1	
COL-PWS-4012037	3/13/2019	10:15:25 AM	D	287.00	8	VCP	0000	0000	1	1	
COL-PWS-4020714	3/13/2019	9:45:22 AM	D	106.63	8	VCP	0000	0000	1	1	
COL-PWS-4020775	3/13/2019	7:25:50 AM	D	287.30	8	PVC	0000	0000	1	1	
COL-PWS-4010197	3/13/2019	8:10:13 AM	D	222.05	8	PVC	2100	0000	2	1	Water level - sag in pipe - 15% - @ 137 ft.
COL-PWS-4010212	3/13/2019	12:37:44 PM	D	176.10	8	PVC	2100	0000	2	1	Water level - sag in pipe - 10% - between 164 ft. - 174 ft.
COL-PWS-4010237	3/13/2019	11:59:09 AM	D	171.30	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - @ 151 ft.
COL-PWS-3001675	3/13/2019	2:13:39 PM	U	98.97	8	VCP	0000	0000	1	1	
COL-PWS-3001372	3/13/2019	9:21:25 AM	D	207.88	8	VCP	0000	2100	1	2	Tap factory made defective - 10 o'clock - @ 207 ft.
COL-PWS-4011010	3/14/2019	2:14:22 PM	U	284.71	8	RPM	1100	3121	1	3	Deposits settled compacted - 15% - @ 274 ft. Medium offset joint @ 270 ft. Tap Break-In intruding - 12 o'clock - @ 284 ft.
COL-PWS-4011645	3/14/2019	8:07:43 AM	D	244.57	8	VCP	0000	3312	1	3	Deposits ingress other - 15% - @ 1 ft. Roots @ 22 ft., 32 ft. & 41 ft.
COL-PWS-4011275	3/14/2019	8:26:27 AM	D	175.40	8	VCP	0000	0000	1	1	
COL-PWS-4011301	3/14/2019	11:57:01 AM	D	170.23	8	VCP	0000	0000	1	1	
COL-PWS-4011304	3/14/2019	1:40:38 PM	D	364.71	8	RPM	0000	0000	1	1	
COL-PWS-4011334	3/14/2019	1:09:17 PM	U	240.89	8	VCP	0000	0000	1	1	
COL-PWS-4011355	3/14/2019	8:27:28 AM	D	295.35	8	VCP	1100	0000	1	1	Medium offset joint.
COL-PWS-4011365	3/14/2019	9:11:17 AM	D	346.63	8	VCP	0000	0000	1	1	
COL-PWS-4011370	3/14/2019	9:31:55 AM	U	109.61	8	VCP	0000	0000	1	1	
COL-PWS-4011380	3/14/2019	12:13:30 PM	D	82.98	8	VCP	0000	0000	1	1	
COL-PWS-4011399	3/14/2019	1:26:59 PM	U	243.08	8	VCP	0000	0000	1	1	
COL-PWS-4011425	3/14/2019	12:19:08 PM	D	371.67	8	VCP	0000	0000	1	1	
COL-PWS-4011519	3/14/2019	10:23:08 AM	D	352.29	8	VCP	0000	0000	1	1	
COL-PWS-4011522	3/14/2019	10:10:54 AM	D	323.97	8	VCP	0000	0000	1	1	
COL-PWS-4011636	3/14/2019	12:32:34 PM	D	362.33	8	VCP	0000	0000	1	1	
COL-PWS-4011666	3/14/2019	10:55:03 AM	U	354.97	8	VCP	0000	1B00	1	1	Roots throughout line.
COL-PWS-4011867	3/14/2019	7:33:21 AM	D	289.78	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4011997	3/14/2019	7:31:10 AM	D	259.77	8	VCP	0000	0000	1	1	
COL-PWS-4021722	3/14/2019	9:47:42 AM	D	305.38	8	VCP	0000	0000	1	1	
COL-PWS-4011010	3/14/2019	1:38:38 PM	D	48.50	8	RPM	0000	3100	1	3	Deposits settled other - 20% - @ 48 ft.
COL-PWS-4011912	3/15/2019	10:53:13 AM	D	269.21	8	VCP	0000	2C00	1	2	Deposits attached grease - 5% - between 8 ft. - 107 ft.
COL-PWS-4010787	3/15/2019	11:34:26 AM	D	311.84	8	RPM	1100	0000	1	1	Medium offset joint @ 90 ft.
COL-PWS-4010643	3/15/2019	8:52:02 AM	D	386.28	8	RPM	0000	0000	1	1	
COL-PWS-4010721	3/15/2019	11:50:43 AM	U	140.32	8	RPM	0000	0000	1	1	
COL-PWS-4011915	3/15/2019	11:11:20 AM	U	286.40	8	VCP	0000	0000	1	1	
COL-PWS-4012042	3/15/2019	9:24:58 AM	D	309.46	12	VCP	0000	0000	1	1	
COL-PWS-4012044	3/15/2019	9:40:00 AM	D	61.81	12	VCP	0000	0000	1	1	
COL-PWS-4012046	3/15/2019	9:44:08 AM	D	495.89	12	VCP	0000	0000	1	1	
COL-PWS-4012113	3/15/2019	10:25:43 AM	D	323.37	8	VCP	0000	0000	1	1	
COL-PWS-4010841	3/15/2019	7:38:51 AM	U	211.77	8	RPM	0000	0000	1	1	
COL-PWS-4010961	3/15/2019	8:04:55 AM	D	361.63	8	RPM	0000	0000	1	1	
COL-PWS-4010841	3/15/2019	7:25:35 AM	D	159.70	8	RPM	2100	2200	2	2	Crack @ 153 ft. Deposits attached grease - 5% - at 153 ft.
COL-PWS-5011154	3/18/2019	7:25:36 AM	D	458.82	12	VCP	3100	1100	3	1	Cracks @ 130 ft. Fine roots @ 401 ft.
COL-PWS-5011582	3/18/2019	11:36:35 AM	D	111.50	8	VCP	0000	3129	1	3	Deposits attached grease - 10% -between 71 ft. - 111 ft.
COL-PWS-5012020	3/18/2019	10:44:33 AM	D	170.13	15	VCP	0000	3100	1	3	Obstacles rocks - 15% - @ 170 ft.
COL-PWS-4010175	3/18/2019	2:36:10 PM	D	220.00	8	PVC	0000	0000	1	1	
COL-PWS-4010251	3/18/2019	3:49:02 PM	D	315.04	8	PVC	0000	0000	1	1	
COL-PWS-4010276	3/18/2019	2:00:50 PM	D	282.09	8	PVC	0000	0000	1	1	
COL-PWS-4010351	3/18/2019	1:45:49 PM	U	160.16	8	PVC	0000	0000	1	1	
COL-PWS-4010403	3/18/2019	3:28:53 PM	D	324.62	8	PVC	0000	0000	1	1	
COL-PWS-4010486	3/18/2019	12:58:00 PM	D	87.22	8	PVC	0000	0000	1	1	
COL-PWS-4010547	3/18/2019	12:37:10 PM	D	265.17	8	PVC	0000	0000	1	1	
COL-PWS-4010600	3/18/2019	9:31:21 AM	U	307.12	8	PVC	0000	2200	1	2	Intruding sealing other - 5% - @ 189 ft. Intruding sealing ring hanging - 10% - @ 254 ft.
COL-PWS-4010635	3/18/2019	8:52:51 AM	D	201.03	8	PVC	0000	2100	1	2	Deposits attached grease - 10% - between 188 ft. - 200 ft.
COL-PWS-4010636	3/18/2019	10:09:37 AM	U	222.15	8	PVC	0000	0000	1	1	
COL-PWS-4010654	3/18/2019	11:23:58 AM	D	253.34	8	PVC	0000	0000	1	1	
COL-PWS-4010706	3/18/2019	11:01:30 AM	D	263.31	8	PVC	0000	2100	1	2	Intruding sealing other - 5% - @ 110 ft.
COL-PWS-4010725	3/18/2019	8:32:00 AM	U	156.15	8	PVC	0000	2100	1	2	Intruding sealing other - 5% - @ 100 ft.
COL-PWS-5011272	3/18/2019	1:31:38 PM	D	242.78	8	VCP	0000	0000	1	1	
COL-PWS-5011321	3/18/2019	1:41:14 PM	D	200.24	8	VCP	0000	0000	1	1	
COL-PWS-5011347	3/18/2019	7:47:31 AM	D	82.58	12	VCP	0000	0000	1	1	
COL-PWS-5011381	3/18/2019	7:53:03 AM	D	239.10	12	VCP	0000	0000	1	1	
COL-PWS-5011466	3/18/2019	12:59:15 PM	D	282.83	8	VCP	0000	0000	1	1	
COL-PWS-5011491	3/18/2019	8:33:37 AM	D	66.78	12	VCP	0000	0000	1	1	
COL-PWS-5011529	3/18/2019	8:40:12 AM	D	149.86	12	VCP	1100	0000	1	1	Crack @ 9 ft.
COL-PWS-5011553	3/18/2019	12:48:46 PM	D	275.97	8	VCP	0000	0000	1	1	
COL-PWS-5011589	3/18/2019	9:29:56 AM	D	465.28	15	VCP	0000	0000	1	1	
COL-PWS-5011653	3/18/2019	12:21:51 PM	U	241.58	8	VCP	0000	0000	1	1	
COL-PWS-5011750	3/18/2019	11:20:24 AM	D	298.13	8	VCP	0000	0000	1	1	
COL-PWS-5011816	3/18/2019	9:46:37 AM	D	437.16	15	VCP	0000	0000	1	1	
COL-PWS-5011906	3/18/2019	11:59:04 AM	U	305.58	8	VCP	0000	0000	1	1	
COL-PWS-4010196	3/18/2019	7:52:24 AM	D	274.26	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - @ 268 ft.
COL-PWS-5009279	3/19/2019	10:50:19 AM	D	353.07	8	VCP	2100	3517	2	3	Roots throughout line.
COL-PWS-5009193	3/19/2019	9:01:21 AM	U	148.43	8	VCP	5141	2113	5	2	Broken pipe - soil visible - @ 80 ft. Multiple fractures @ 80 ft. Medium offset joint @ 92 ft. Fine roots between 128 ft. - 145 ft.
COL-PWS-5009079	3/19/2019	12:37:12 PM	U	237.01	8	VCP	3100	1400	3	1	Roots at joint - @ 65 ft., 72 ft., 88 ft., & 92 ft.
COL-PWS-5009207	3/19/2019	2:35:17 PM	U	352.00	8	VCP	4100	4132	4	4	Multiple fractures @ 23 ft. Medium roots @ 24 ft. & 41 ft. Roots ball lateral - 70% - @ 32 ft.
COL-PWS-5009236	3/19/2019	1:34:48 PM	D	35.59	8	VCP	5100	5141	5	5	Broken pipe @ 30 ft. & 35 ft. Roots ball barrel - 55% - @ 30 ft.
COL-PWS-5009108	3/19/2019	9:55:04 AM	U	20.24	8	VCP	0000	4100	1	4	Tap Break-In Intruding - @ 19 ft.
COL-PWS-5009187	3/19/2019	10:01:55 AM	U	139.43	8	VCP	0000	4237	1	4	Roots throughout line.
COL-PWS-5009078	3/19/2019	1:07:43 PM	D	316.41	8	VCP	0000	4136	1	4	Roots throughout line.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-5009141	3/19/2019	9:27:36 AM	U	317.19	8	VCP	0000	4131	1	4	Roots throughout line.
COL-PWS-5009149	3/19/2019	1:26:14 PM	D	93.47	8	VCP	0000	3100	1	3	Medium roots in lateral @ 31ft.
COL-PWS-5009245	3/19/2019	10:32:11 AM	D	297.24	8	VCP	0000	3421	1	3	Roots throughout line.
COL-PWS-5009318	3/19/2019	11:15:14 AM	D	274.26	8	VCP	0000	4233	1	4	Roots throughout line.
COL-PWS-5020871	3/19/2019	2:14:07 PM	D	143.73	8	VCP	0000	3412	1	3	Roots throughout line.
COL-PWS-4010551	3/19/2019	7:51:59 AM	U	100.12	8	PVC	0000	0000	1	1	
COL-PWS-4010585	3/19/2019	8:07:20 AM	D	112.74	8	PVC	0000	0000	1	1	
COL-PWS-5009179	3/19/2019	3:06:59 PM	U	144.42	8	VCP	0000	0000	1	1	
COL-PWS-5009357	3/19/2019	3:54:22 PM	D	161.43	8	VCP	0000	0000	1	1	
COL-PWS-5009368	3/19/2019	4:01:54 PM	D	192.13	8	VCP	0000	0000	1	1	
COL-PWS-5009392	3/19/2019	4:10:33 PM	D	209.14	8	VCP	0000	0000	1	1	
COL-PWS-5011277	3/19/2019	7:21:02 AM	U	387.07	8	VCP	0000	0000	1	1	
COL-PWS-5011376	3/19/2019	7:58:16 AM	D	348.41	8	VCP	0000	0000	1	1	
COL-PWS-5011558	3/19/2019	8:46:52 AM	D	327.55	8	VCP	0000	0000	1	1	
COL-PWS-5011598	3/19/2019	10:20:15 AM	D	198.16	8	VCP	0000	0000	1	1	
COL-PWS-5011611	3/19/2019	9:16:20 AM	D	270.60	8	VCP	0000	0000	1	1	
COL-PWS-5011756	3/19/2019	9:18:10 AM	D	353.48	8	VCP	0000	0000	1	1	
COL-PWS-5011925	3/19/2019	10:42:40 AM	D	246.85	8	VCP	0000	0000	1	1	
COL-PWS-5012169	3/19/2019	11:31:50 AM	D	298.43	15	VCP	0000	0000	1	1	
COL-PWS-5012265	3/19/2019	1:40:29 PM	D	303.40	8	VCP	0000	1900	1	1	Fine roots @ 80 ft. Fine roots at joint between 98 ft. - 141 ft.
COL-PWS-5012335	3/19/2019	1:05:20 PM	D	270.01	8	VCP	1200	1100	1	1	Cracks @ 45 ft. & 225 ft. Fine roots @ 225 ft.
COL-PWS-5020870	3/19/2019	11:37:22 AM	D	30.31	8	VCP	0000	1100	1	1	Fine Roots @ 9 ft.
COL-PWS-6004084	3/19/2019	8:53:30 AM	D	157.15	8	PVC	0000	0000	1	1	
COL-PWS-6004962	3/19/2019	9:10:52 AM	D	100.01	8	PVC	0000	0000	1	1	
COL-PWS-6006462	3/19/2019	9:28:36 AM	D	330.23	8	PVC	0000	0000	1	1	
COL-PWS-6008844	3/19/2019	9:45:55 AM	D	291.17	8	PVC	0000	0000	1	1	
COL-PWS-6009478	3/19/2019	10:26:19 AM	D	189.04	8	PVC	0000	0000	1	1	
COL-PWS-5009353	3/19/2019	3:18:41 PM	D	124.27	8	VCP	2200	3212	2	3	Water level - sag in pipe - 10% - @ 6 ft. Medium roots at joint - @ 20 ft., 26 ft., 30 ft., 35 ft., & 65 ft. Water level - sag in pipe - 0% - between 96 ft. - 124 ft.
COL-PWS-5009288	3/19/2019	2:25:21 PM	D	175.61	8	VCP	2100	0000	2	1	Water level - sag in pipe - 5% - between 167 ft. - 174 ft.
COL-PWS-5009187	3/19/2019	9:14:38 AM	D	60.23	8	VCP	0000	4133	1	4	Roots throughout line. Deposits attached - 30% - @ 60 ft.
COL-PWS-5012020	3/19/2019	11:20:02 AM	D	326.75	15	VCP	1200	0000	1	1	Cracks @ 16 ft. & 37 ft.
COL-PWS-5012289	3/19/2019	12:11:36 PM	D	291.17	15	VCP	1100	0000	1	1	Crack @ 179 ft.
COL-PWS-5009236	3/19/2019	1:50:10 PM	U	138.55	8	VCP	2100	3314	2	3	Roots throughout line.
COL-PWS-5009425	3/20/2019	9:19:27 AM	D	52.21	8	VCP	3100	0000	3	1	Multiple cracks @ 48 ft.
COL-PWS-5009264	3/20/2019	7:55:27 AM	D	251.38	8	VCP	4632	0000	4	1	Multiple fractures @ 6 ft., 46 ft., 133 ft., 192 ft., 223 ft., 235 ft. & 238 ft. Crack @ 211 ft.
COL-PWS-5009409	3/20/2019	8:59:50 AM	D	257.06	8	VCP	4233	1500	4	1	Multiple fractures @ 103 ft. & 209 ft. Fine roots between 19 ft. - 62 ft. Spiral fracture @ 251 ft.
COL-PWS-2011241	3/20/2019	11:50:36 AM	D	458.13	18	VCP	2100	4100	2	4	Infiltration runner - @ 452 ft.
COL-PWS-6009980	3/20/2019	10:35:00 AM	U	343.07	8	VCP	0000	3200	1	3	Deposits attached grease - 15% - @ 147 ft. & 290 ft.
0	3/20/2019	1:37:38 PM	D	13.61	15	VCP	0000	0000	1	1	
COL-PWS-2010696	3/20/2019	1:18:10 PM	D	300.91	15	VCP	0000	0000	1	1	
COL-PWS-2010828	3/20/2019	1:19:32 PM	D	188.82	15	VCP	0000	0000	1	1	
COL-PWS-2010913	3/20/2019	1:20:21 PM	D	236.32	15	VCP	0000	0000	1	1	
COL-PWS-2011225	3/20/2019	8:42:48 AM	D	454.75	18	VCP	1100	0000	1	1	Crack @ 450 ft.
COL-PWS-2011228	3/20/2019	8:39:49 AM	D	454.45	18	VCP	0000	1200	1	1	Fine roots @ 377 ft. & 380 ft.
COL-PWS-2011229	3/20/2019	8:40:50 AM	D	404.56	18	VCP	0000	0000	1	1	
COL-PWS-2011240	3/20/2019	11:31:41 AM	D	446.40	18	VCP	0000	0000	1	1	
COL-PWS-2011243	3/20/2019	12:30:43 PM	D	446.30	18	VCP	0000	0000	1	1	
COL-PWS-4011218	3/20/2019	8:00:18 AM	D	461.80	18	VCP	0000	0000	1	1	
COL-PWS-4011220	3/20/2019	8:02:59 AM	D	446.60	18	VCP	0000	0000	1	1	
COL-PWS-4011224	3/20/2019	8:37:58 AM	D	420.86	18	VCP	0000	0000	1	1	
COL-PWS-5009225	3/20/2019	7:17:13 AM	U	67.07	8	VCP	0000	0000	1	1	
COL-PWS-5009238	3/20/2019	7:45:56 AM	D	110.49	8	VCP	0000	0000	1	1	
COL-PWS-5009241	3/20/2019	7:34:51 AM	U	23.27	8	VCP	0000	0000	1	1	
COL-PWS-5009332	3/20/2019	8:49:10 AM	U	112.64	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-5009372	3/20/2019	8:34:31 AM	U	152.63	8	VCP	0000	1100	1	1	Fine roots @ 7 ft.
COL-PWS-5009442	3/20/2019	11:43:14 AM	D	339.29	8	VCP	0000	0000	1	1	
COL-PWS-5009447	3/20/2019	10:47:19 AM	D	345.74	8	VCP	0000	0000	1	1	
COL-PWS-5009476	3/20/2019	9:34:08 AM	U	306.82	8	VCP	0000	1200	1	1	Fine roots @ 11 ft. & 25 ft.
COL-PWS-5009535	3/20/2019	11:29:52 AM	U	219.61	8	VCP	0000	0000	1	1	
COL-PWS-6005506	3/20/2019	7:16:41 AM	D	277.06	8	PVC	0000	0000	1	1	
COL-PWS-6008000	3/20/2019	7:33:01 AM	D	355.11	8	PVC	0000	0000	1	1	
COL-PWS-6009413	3/20/2019	8:12:07 AM	D	151.35	8	PVC	0000	0000	1	1	
COL-PWS-6009467	3/20/2019	8:33:30 AM	D	107.03	8	PVC	0000	0000	1	1	
COL-PWS-6009533	3/20/2019	8:39:07 AM	D	242.96	8	PVC	0000	0000	1	1	
COL-PWS-6009622	3/20/2019	9:06:59 AM	D	337.08	8	PVC	0000	0000	1	1	
COL-PWS-6009763	3/20/2019	12:10:19 PM	D	274.10	8	PVC	0000	0000	1	1	
COL-PWS-6009949	3/20/2019	9:34:11 AM	D	290.16	8	PVC	0000	0000	1	1	
COL-PWS-6010160	3/20/2019	9:47:19 AM	D	267.34	8	PVC	0000	0000	1	1	
COL-PWS-6010529	3/20/2019	9:59:29 AM	D	280.22	8	PVC	0000	0000	1	1	
COL-PWS-6010552	3/20/2019	10:38:30 AM	D	216.60	8	VCP	0000	0000	1	1	
COL-PWS-6010883	3/20/2019	11:34:59 AM	D	301.01	8	VCP	0000	0000	1	1	
COL-PWS-6011068	3/20/2019	10:51:13 AM	D	132.05	8	VCP	0000	0000	1	1	
COL-PWS-6011345	3/20/2019	10:58:28 AM	D	151.01	8	VCP	0000	0000	1	1	
COL-PWS-6011947	3/20/2019	1:09:27 PM	U	195.64	8	PVC	0000	0000	1	1	
COL-PWS-6012218	3/20/2019	1:33:16 PM	D	95.10	8	PVC	0000	0000	1	1	
COL-PWS-6012359	3/20/2019	12:52:10 PM	D	326.01	8	RPM	0000	0000	1	1	
COL-PWS-6012393	3/20/2019	12:31:30 PM	U	25.08	8	RPM	0000	0000	1	1	
COL-PWS-6012766	3/20/2019	12:35:05 PM	U	240.31	8	RPM	0000	0000	1	1	
COL-PWS-6012938	3/20/2019	1:57:32 PM	D	355.06	8	PVC	0000	0000	1	1	
COL-PWS-6018029	3/20/2019	1:39:29 PM	D	246.14	8	PVC	0000	0000	1	1	
COL-PWS-6018032	3/20/2019	10:13:28 AM	D	70.08	8	PVC	0000	0000	1	1	
COL-PWS-6018034	3/20/2019	11:47:31 AM	D	280.31	8	VCP	1100	2100	1	2	Medium offset joint @ 250 ft.
COL-PWS-5009485	3/20/2019	11:16:11 AM	U	214.03	8	VCP	2100	0000	2	1	Water level - pipe sag in pipe - 10% - @ 11 ft.
COL-PWS-5009621	3/21/2019	9:18:12 AM	D	304.38	8	VCP	3121	2100	3	2	Multiple cracks @ 89 ft. Water level - sag in pipe - 25% - @ 126 ft. Deposits attached grease - 10% - @ 123 ft.
COL-PWS-5009434	3/21/2019	3:22:28 PM	D	349.06	8	VCP	4231	0000	4	1	Multiple fractures @ 130 ft. & 344 ft. Fracture @ 40 ft., 214 ft. & 297 ft. Cracks @ 267 ft. & 277 ft.
COL-PWS-5009239	3/21/2019	1:13:21 PM	D	248.45	8	VCP	3100	0000	3	1	Fracture @ 157 ft.
COL-PWS-5009387	3/21/2019	12:45:18 PM	D	295.09	8	VCP	3100	0000	3	1	Spiral fracture @ 290 ft.
COL-PWS-5009545	3/21/2019	8:32:57 AM	U	257.35	8	VCP	3100	0000	3	1	Fracture @ 58 ft.
COL-PWS-2011977	3/21/2019	10:22:50 AM	D	506.13	24	VCP	5141	1100	5	1	Broken pipe - void visible - @ 127 ft. Repair patch defective - @ 123 ft. Fine roots @ 119 ft.
COL-PWS-2011245	3/21/2019	8:00:57 AM	D	381.61	24	VCP	0000	3100	1	3	Obstacle other - 20% - @ 381 ft.
COL-PWS-2011012	3/21/2019	7:58:08 AM	D	434.38	15	VCP	0000	0000	1	1	
COL-PWS-5009652	3/21/2019	9:00:30 AM	U	168.37	8	VCP	0000	0000	1	1	
0	3/21/2019	1:54:05 PM	D	408.54	24	VCP	0000	0000	1	1	
COL-PWS-2011773	3/21/2019	10:05:31 AM	D	135.25	24	VCP	0000	0000	1	1	
COL-PWS-2011838	3/21/2019	10:10:55 AM	D	273.48	24	VCP	0000	0000	1	1	
COL-PWS-2012214	3/21/2019	10:38:47 AM	D	493.41	24	VCP	0000	0000	1	1	
COL-PWS-2012539	3/21/2019	12:15:22 PM	D	433.18	24	VCP	1100	2100	1	2	Crack @ 12 ft. Alignment right - 20% - @ 429 ft.
COL-PWS-2012750	3/21/2019	12:28:08 PM	D	415.39	24	VCP	0000	0000	1	1	
COL-PWS-5009303	3/21/2019	11:46:00 AM	D	226.74	8	VCP	0000	0000	1	1	
COL-PWS-5009340	3/21/2019	1:48:55 PM	U	147.25	8	VCP	0000	0000	1	1	
COL-PWS-5009403	3/21/2019	10:36:28 AM	D	254.12	8	VCP	1100	0000	1	1	Medium offset joint @ 248 ft.
COL-PWS-5009410	3/21/2019	2:16:26 PM	D	114.79	8	VCP	0000	0000	1	1	
COL-PWS-5009428	3/21/2019	12:28:29 PM	D	268.20	8	VCP	0000	0000	1	1	
COL-PWS-5009457	3/21/2019	12:09:40 PM	U	100.91	8	VCP	0000	0000	1	1	
COL-PWS-5009506	3/21/2019	10:14:25 AM	U	49.28	8	VCP	1100	0000	1	1	Medium offset joint @ 5 ft.
COL-PWS-5009527	3/21/2019	10:22:34 AM	D	200.34	8	VCP	1100	0000	1	1	Crack @ 198 ft.
COL-PWS-5009696	3/21/2019	2:59:05 PM	D	70.99	8	VCP	0000	0000	1	1	
COL-PWS-5011638	3/21/2019	9:14:29 AM	U	244.24	8	RPM	0000	0000	1	1	
COL-PWS-5012013	3/21/2019	9:34:43 AM	D	350.47	8	RPM	0000	0000	1	1	
COL-PWS-5012348	3/21/2019	11:17:18 AM	U	210.67	8	RPM	0000	0000	1	1	
COL-PWS-5012677	3/21/2019	11:49:24 AM	D	307.10	8	RPM	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-5012844	3/21/2019	9:50:51 AM	D	350.06	8	RPM	0000	0000	1	1	
COL-PWS-5013014	3/21/2019	12:19:56 PM	D	276.03	8	RPM	0000	0000	1	1	
COL-PWS-5013643	3/21/2019	11:07:01 AM	U	227.10	8	RPM	0000	0000	1	1	
COL-PWS-5013889	3/21/2019	10:42:42 AM	U	161.15	8	RPM	0000	0000	1	1	
COL-PWS-5014442	3/21/2019	10:53:37 AM	D	365.58	8	RPM	0000	0000	1	1	
COL-PWS-5014778	3/21/2019	1:34:36 PM	U	187.35	8	VCP	0000	0000	1	1	
COL-PWS-5015224	3/21/2019	1:23:04 PM	U	402.51	8	VCP	0000	0000	1	1	
COL-PWS-5016002	3/21/2019	12:33:34 PM	D	349.29	8	VCP	0000	0000	1	1	
COL-PWS-5016819	3/21/2019	12:58:47 PM	U	352.14	8	VCP	0000	0000	1	1	
COL-PWS-5020972	3/21/2019	11:28:59 AM	U	285.28	8	RPM	0000	0000	1	1	
COL-PWS-5009313	3/21/2019	1:29:05 PM	D	253.44	8	VCP	2100	0000	2	1	Water level - sag in pipe - 10% - @ 217 ft.
COL-PWS-5009370	3/21/2019	11:57:09 AM	D	229.19	8	VCP	2100	0000	2	1	Water level - sag in pipe - 5% - @ 206 ft.
COL-PWS-5009547	3/21/2019	9:42:31 AM	D	211.49	8	VCP	2100	0000	2	1	Water level - sag in pipe - 15% - between 110 ft. - 125 ft.
COL-PWS-5009579	3/21/2019	2:34:07 PM	D	237.70	8	VCP	2100	0000	2	1	Water level - sag in pipe - 10% - between 188 ft. - 236 ft.
COL-PWS-5009583	3/21/2019	9:31:15 AM	D	272.21	8	VCP	2100	2200	2	2	Deposits attached grease - 10% - between 164 ft. - 208 ft. Deposits attached other - @ 247 ft. Water level - sag in pipe - 15% - @ 253 ft.
COL-PWS-5020869	3/21/2019	11:00:08 AM	D	252.26	8	VCP	2200	0000	2	1	Water level - sag in pipe - 5% - @ 72 ft. & 245 ft.
COL-PWS-2012932	3/21/2019	1:28:31 PM	D	326.05	24	VCP	0000	0000	1	1	
COL-PWS-2013158	3/21/2019	1:37:38 PM	D	96.00	24	VCP	0000	0000	1	1	
COL-PWS-5009353	3/21/2019	3:46:33 PM	U	153.51	8	VCP	0000	0000	1	1	
COL-PWS-5009652	3/21/2019	8:48:24 AM	U	210.51	8	VCP	0000	0000	1	1	
COL-PWS-5009285	3/22/2019	2:18:31 PM	D	354.25	10	VCP	5222	0000	5	1	Broken pipe @ 180 ft. & 258 ft. Fracture @ 248 ft. & 255 ft.
COL-PWS-5009557	3/22/2019	10:17:32 AM	D	28.36	8	VCP	3100	0000	3	1	Fracture @ 22 ft.
COL-PWS-5009603	3/22/2019	10:42:23 AM	D	216.77	8	VCP	3221	1100	3	1	Cracks @ 9 ft., 36 ft., 110 ft. & 183 ft. Roots @ 111 ft.
COL-PWS-5009804	3/22/2019	12:51:22 PM	D	350.24	8	VCP	3321	0000	3	1	Fractures @ 150 ft., 207 ft., & 345 ft. Cracks @ 296 ft.
COL-PWS-5009144	3/22/2019	7:47:44 AM	D	354.25	8	VCP	4432	1100	4	1	Cracks @ 50 ft., 67 ft., & 195 ft. Fractures @ 160 ft., 197 ft., 201 ft., 211 ft. & 315 ft. Roots @ 274 ft.
COL-PWS-5009345	3/22/2019	8:58:20 AM	D	353.37	8	VCP	4A34	3112	4	3	Fractures and cracks throughout line.
COL-PWS-5009731	3/22/2019	1:11:14 PM	D	328.04	8	VCP	4231	2100	4	2	Fractures @ 20ft., 152 ft., & 258 ft. Cracks @ 51 ft., 306 ft. Medium offset joint @ 322 ft. Deposits attached grease - 5% - @ 35 ft.
COL-PWS-5009250	3/22/2019	8:07:46 AM	D	286.39	8	VCP	5145	1100	5	1	Broken pipe @ 19 ft. Cracks throughout line.
COL-PWS-1005778	3/22/2019	12:43:32 PM	U	240.09	6	VCP	3100	3122	3	3	Fracture @ 154 ft. Roots @ 35 ft., 149 ft. Deposits settled fine - 10% - between 198 ft. - 204 ft.
COL-PWS-1005811	3/22/2019	1:06:26 PM	D	396.12	6	VCP	4131	5100	4	5	Tap Break-in Intruding - 2 o'clock - @ 107 ft. Fracture @ 29 ft. Crack @ 46 ft.
COL-PWS-1007285	3/22/2019	11:05:20 AM	U	141.29	6	VCP	4111	3111	4	3	Multiple fractures @ 17 ft. Roots @ 59 ft. & 117 ft. Medium offset joint @ 132 ft.
COL-PWS-1007292	3/22/2019	10:45:10 AM	D	144.03	6	VCP	4434	1100	4	1	Multiple fractures @ 5 ft. , 11 ft., 96 ft. & 135 ft. Cracks @ 14 ft., 41 ft., 78 ft. & 105 ft.
COL-PWS-1007316	3/22/2019	11:17:55 AM	D	258.15	6	VCP	5346	4132	5	4	Broken pipe @ 11 ft., 125 ft., & 206 ft. Multiple fractures @ 8 ft., 75 ft., 95 ft., 113 ft., 191 ft., & 221 ft. Root @ 81 ft., 85 ft., 121 ft., 125 ft. & 149 ft.
COL-PWS-1007411	3/22/2019	9:55:21 AM	D	350.04	6	VCP	5542	3714	5	3	Broken pipe @ 4 ft., 91 ft., 94 ft., 208 ft. & 268 ft. Multiple fractures throughout line. Multiple roots through out line.
COL-PWS-5009543	3/22/2019	10:35:43 AM	D	109.22	8	VCP	4131	0000	4	1	Fractures @ 69 ft. & 70 ft.
COL-PWS-5009448	3/22/2019	9:29:42 AM	D	328.14	8	VCP	4132	2100	4	2	Cracks @ 2 ft., & 70 ft. Fractures @ 52 ft.
COL-PWS-5009884	3/22/2019	12:19:04 PM	U	326.48	8	VCP	5147	0000	5	1	Broken pipe @ 320 ft. Fractures throughout line. Cracks @ 49 ft., 261 ft. & 320 ft.
COL-PWS-1005718	3/22/2019	1:39:46 PM	U	357.75	6	VCP	0000	3413	1	3	Roots throughout line.
COL-PWS-1007094	3/22/2019	12:09:13 PM	D	190.09	8	VCP	0000	1300	1	1	Roots @ 16 ft., 56 ft. & 120 ft.
COL-PWS-1007142	3/22/2019	11:53:23 AM	U	140.00	8	VCP	0000	1100	1	1	Roots @ 132 ft.
COL-PWS-1007286	3/22/2019	10:36:51 AM	U	123.11	6	VCP	1100	0000	1	1	Medium offset joint @ 8 ft.
COL-PWS-5000104	3/22/2019	7:23:45 AM	D	450.02	15	VCP	0000	0000	1	1	
COL-PWS-5009082	3/22/2019	7:32:26 AM	D	170.13	8	VCP	0000	1100	1	1	Roots @ 12 ft.
COL-PWS-5009234	3/22/2019	1:59:55 PM	U	354.15	8	VCP	0000	0000	1	1	
COL-PWS-5009311	3/22/2019	2:53:33 PM	U	233.98	10	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-5009328	3/22/2019	3:06:27 PM	U	151.36	10	VCP	0000	0000	1	1	
COL-PWS-5012960	3/22/2019	9:01:10 AM	D	318.07	8	VCP	0000	0000	1	1	
COL-PWS-5013676	3/22/2019	8:51:38 AM	D	314.00	8	VCP	0000	0000	1	1	
COL-PWS-5013984	3/22/2019	8:44:32 AM	U	161.03	8	VCP	0000	0000	1	1	
COL-PWS-5016143	3/22/2019	7:56:17 AM	D	35.35	15	VCP	0000	0000	1	1	
COL-PWS-5016986	3/22/2019	7:41:53 AM	D	414.27	15	VCP	0000	0000	1	1	
COL-PWS-5021891	3/22/2019	8:00:48 AM	U	335.82	8	VCP	0000	0000	1	1	
COL-PWS-5009569	3/22/2019	10:02:18 AM	U	155.37	8	VCP	2100	0000	2	1	Water level - sag in pipe - 15% - @ 29 ft.
COL-PWS-1005718	3/22/2019	12:35:23 PM	D	2.10	6	VCP	0000	5100	1	5	Deposits settled fine - 55% - @ 2 ft. Line blocked.
COL-PWS-5009543	3/22/2019	10:24:13 AM	D	45.37	10	VCP	0000	0000	1	1	
COL-PWS-4016257	3/25/2019	1:27:47 PM	D	136.61	8	VCP	0000	3119	1	3	Roots @ 62 ft., 83 ft., 88 ft., 98 ft., 103 ft. & 135 ft.
COL-PWS-5009113	3/25/2019	9:05:02 AM	D	120.07	8	VCP	3112	3121	3	3	Roots throughout line. Spiral fracture @ 103 ft. Medium offset joint @ 115 ft. & 116 ft.
COL-PWS-5009176	3/25/2019	8:41:59 AM	D	257.25	8	VCP	3200	0000	3	1	Spiral fracture @ 201 ft. & 217 ft.
COL-PWS-4017406	3/25/2019	10:43:51 AM	D	302.66	8	VCP	453C	2200	4	2	Multiple fractures throughout line.
COL-PWS-4017550	3/25/2019	10:30:53 AM	D	196.18	8	VCP	423A	2100	4	2	Multiple fractures throughout line.
COL-PWS-4017635	3/25/2019	9:36:33 AM	D	241.82	8	VCP	453A	0000	4	1	Multiple fractures throughout line.
COL-PWS-4017664	3/25/2019	10:18:26 AM	D	188.09	8	VCP	4136	0000	4	1	Multiple fractures throughout line.
COL-PWS-5009429	3/25/2019	2:02:42 PM	D	249.23	8	VCP	4312	3200	4	3	Multiple fractures @ 2 ft., 230 ft. & 238 ft. Medium offset joint @ 202 ft. & 218 ft. Medium roots @ 229 ft. & 233 ft.
COL-PWS-4014511	3/25/2019	8:33:31 AM	U	291.86	8	PVC	4100	0000	4	1	Water level - sag in pipe - 100% - @ 291 ft.
COL-PWS-1008175	3/25/2019	10:29:52 AM	D	292.61	8	VCP	524D	4B12	5	4	Broken pipe @ 289 ft. & 292 ft. Collapsed pipe @ 291 ft. Water level - sag in pipe - 30% - between 6 ft. - 28 ft. Water level sag in pipe - 80% - between 65 ft. - 161 ft.
COL-PWS-1007988	3/25/2019	7:24:28 AM	D	58.69	6	VCP	5100	5141	1	5	Deposits attached grease - 85% - @ 31 ft. Alignment down - 45 % - @ 57 ft. Medium roots @ 57 ft.
COL-PWS-1007852	3/25/2019	9:01:41 AM	D	472.19	6	VCP	3200	0000	3	1	Fracture @ 56 ft. Crack @ 209 ft.
COL-PWS-1005622	3/25/2019	12:55:40 PM	D	6.08	6	VCP	5100	3100	5	3	Broken pipe @ 4 ft. Deposits settled fine - 20% - @ 0 ft.
COL-PWS-1005680	3/25/2019	12:14:23 PM	U	409.90	6	VCP	5100	5149	5	5	Broken Pipe 2 249 ft. & 254 ft. Roots throughout line.
COL-PWS-1007913	3/25/2019	7:37:48 AM	D	439.71	6	VCP	5141	0000	5	1	Broken pipe @ 5 ft. Fractures @ 5 ft., 89 ft., & 439 ft. Cracks @ 78 ft., 82 ft., 97 ft., 117 ft., 168 ft. & 326 ft.
COL-PWS-6009510	3/25/2019	2:31:00 PM	D	236.23	10	VCP	3100	0000	3	1	Fracture @ 215 ft.
COL-PWS-1008206	3/25/2019	10:07:51 AM	U	290.09	8	VCP	4100	3100	4	3	Fracture @ 64 ft. Medium roots @ 62 ft.
COL-PWS-4014624	3/25/2019	9:35:50 AM	U	257.07	8	PVC	4131	0000	4	1	Broken pipe @ 240 ft. Fracture @ 241 ft.
COL-PWS-2004544	3/25/2019	1:44:37 PM	D	37.50	8	VCP	5100	5100	5	5	Broken pipe - soil visible - @ 36 ft. Obstacle pipe material - 35% - @ 37 ft
COL-PWS-4017309	3/25/2019	9:06:58 AM	U	95.07	8	VCP	0000	3100	1	3	Tap Break-In Intruding - 8 o'clock - @ 95 ft.
COL-PWS-4016521	3/25/2019	1:56:07 PM	D	136.70	8	VCP	0000	3100	1	3	Deposits settled fine - 15% - @ 136 ft.
COL-PWS-4016882	3/25/2019	1:03:26 PM	D	8.68	8	VCP	0000	4100	1	4	Deposits settled - 30% - @ 8 ft.
COL-PWS-4017273	3/25/2019	12:15:11 PM	U	150.45	8	VCP	0000	3100	1	3	Deposits settled - 15% - @ 150 ft.
COL-PWS-4017770	3/25/2019	7:32:50 AM	U	57.82	8	VCP	0000	5100	1	5	Deposits settled compacted - 70% - @ 57 ft.
COL-PWS-1008200	3/25/2019	9:47:43 AM	U	251.11	6	VCP	0000	3400	1	3	Medium roots @ 30 ft., 42 ft., 54 ft., & 218 ft.
COL-PWS-4016381	3/25/2019	1:42:03 PM	D	121.88	8	VCP	0000	4100	1	4	Medium roots at barrel - 20% - @ 85 ft.
COL-PWS-5009115	3/25/2019	1:26:02 PM	U	50.16	8	VCP	0000	4134	1	4	Medium roots throughout line.
COL-PWS-4014678	3/25/2019	8:13:07 AM	D	52.44	8	PVC	0000	2100	1	2	Deposits attached grease - 5% - @ 11 ft.
COL-PWS-4017387	3/25/2019	12:11:47 PM	U	64.94	8	VCP	0000	0000	1	1	
COL-PWS-1007983	3/25/2019	7:12:35 AM	U	54.06	6	VCP	0000	0000	1	1	
COL-PWS-1007999	3/25/2019	8:49:07 AM	D	56.69	6	VCP	0000	0000	1	1	
COL-PWS-1008221	3/25/2019	9:59:51 AM	U	134.31	6	VCP	0000	0000	1	1	
COL-PWS-4009504	3/25/2019	7:17:33 AM	U	302.52	8	PVC	0000	2100	1	2	Tap Break-In - 2 o'clock - @ 50 ft.
COL-PWS-4009505	3/25/2019	7:39:23 AM	D	161.04	8	PVC	0000	0000	1	1	
COL-PWS-4014499	3/25/2019	7:47:53 AM	U	218.77	8	PVC	0000	0000	1	1	
COL-PWS-4014610	3/25/2019	8:01:50 AM	D	234.31	8	PVC	0000	0000	1	1	
COL-PWS-4014695	3/25/2019	11:02:25 AM	D	334.17	8	VCP	0000	0000	1	1	
COL-PWS-4014732	3/25/2019	9:17:21 AM	D	254.67	8	PVC	0000	0000	1	1	
COL-PWS-4014788	3/25/2019	10:46:16 AM	U	263.39	8	VCP	0000	0000	1	1	
COL-PWS-4014824	3/25/2019	10:10:11 AM	U	194.51	8	PVC	0000	0000	1	1	
COL-PWS-4014910	3/25/2019	12:23:59 PM	U	21.36	8	VCP	0000	1100	1	1	Vermin cockroach @ 21 ft.
COL-PWS-4014913	3/25/2019	11:44:33 AM	D	268.10	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4014981	3/25/2019	12:06:30 PM	U	352.72	8	VCP	0000	0000	1	1	
COL-PWS-4015022	3/25/2019	11:30:48 AM	U	246.14	8	VCP	0000	0000	1	1	
COL-PWS-4015175	3/25/2019	12:55:12 PM	U	310.11	8	VCP	0000	0000	1	1	
COL-PWS-4015182	3/25/2019	12:35:52 PM	D	354.63	8	VCP	0000	0000	1	1	
COL-PWS-4015297	3/25/2019	1:17:30 PM	D	222.18	8	VCP	0000	0000	1	1	
COL-PWS-4016418	3/25/2019	1:48:43 PM	D	212.47	8	VCP	0000	0000	1	1	
COL-PWS-4017506	3/25/2019	9:17:41 AM	U	181.17	8	VCP	1100	0000	1	1	Medium offset joint @ 175 ft.
COL-PWS-4017632	3/25/2019	11:44:40 AM	U	185.07	8	VCP	0000	2100	1	2	Deposits settled compacted - 10% - @ 13 ft.
COL-PWS-4017814	3/25/2019	7:45:13 AM	D	220.46	8	VCP	0000	0000	1	1	
COL-PWS-4017852	3/25/2019	8:01:00 AM	D	300.22	8	VCP	0000	0000	1	1	
COL-PWS-4017927	3/25/2019	8:29:26 AM	D	134.75	8	VCP	0000	0000	1	1	
COL-PWS-4020431	3/25/2019	11:33:24 AM	D	36.86	8	VCP	0000	0000	1	1	
COL-PWS-4020432	3/25/2019	9:27:57 AM	D	83.37	8	VCP	0000	0000	1	1	
COL-PWS-4020508	3/25/2019	1:35:08 PM	D	98.97	8	VCP	1100	1100	1	1	Medium separated joint @ 19 ft. Roots @ 19 ft.
COL-PWS-5009132	3/25/2019	12:39:41 PM	D	286.19	8	VCP	1100	0000	1	1	Medium offset joint @ 106 ft.
COL-PWS-5009178	3/25/2019	10:19:19 AM	U	277.00	8	VCP	0000	0000	1	1	
COL-PWS-5009220	3/25/2019	10:41:49 AM	D	276.61	8	VCP	0000	0000	1	1	
COL-PWS-5009265	3/25/2019	12:29:05 PM	D	225.57	8	VCP	0000	0000	1	1	
COL-PWS-5009406	3/25/2019	2:43:59 PM	D	186.36	10	VCP	0000	0000	1	1	
COL-PWS-6009509	3/25/2019	2:24:46 PM	D	46.05	10	VCP	0000	0000	1	1	
COL-PWS-7009581	3/25/2019	3:30:23 PM	D	250.11	8	PVC	1100	0000	1	1	Medium angular joint @ 244 ft.
COL-PWS-7009624	3/25/2019	3:41:54 PM	D	188.51	8	PVC	0000	0000	1	1	
COL-PWS-7009668	3/25/2019	3:49:34 PM	D	216.28	8	PVC	0000	0000	1	1	
COL-PWS-4017367	3/25/2019	8:49:00 AM	U	336.11	8	VCP	2800	0000	2	1	Water level - sag in pipe - 25% - between 250 ft. - 261 ft. & between 281 ft. - 309 ft.
COL-PWS-4017761	3/25/2019	11:36:50 AM	D	176.49	8	VCP	2100	0000	2	1	Fracture @ 3 ft.
COL-PWS-5009162	3/25/2019	9:32:02 AM	U	314.45	8	VCP	2100	1100	2	1	Spiral crack @ 4 ft. Fine roots @ 111 ft.
COL-PWS-5009205	3/25/2019	10:57:40 AM	D	214.03	8	VCP	2200	0000	2	1	Water level - sag in pipe - 5 % - @ 14 ft. Water level - sag in pipe - 10 % - @ 126 ft.
COL-PWS-5009240	3/25/2019	8:26:05 AM	D	265.17	8	VCP	2100	2300	2	2	Deposits attached other - 10 % - @ 188 ft. Deposits attached other - 10 % - @ 215 ft. Deposits attached other - 10 % - @ 225 ft. Crack @ 252 ft.
COL-PWS-5009256	3/25/2019	10:05:27 AM	D	201.42	8	VCP	2100	0000	2	1	Large offset joint @ 100 ft.
COL-PWS-1007988	3/25/2019	8:44:38 AM	U	8.42	6	VCP	5100	0000	5	1	Broken pipe @ 6 ft.
COL-PWS-4014511	3/25/2019	8:33:31 AM	D	15.64	8	PVC	4100	0000	4	1	Water level - sag in pipe - 100% - @ 15 ft.
COL-PWS-1005680	3/25/2019	12:05:18 PM	D	6.08	6	VCP	0000	5100	1	5	Tap Break-In Intruding - @ 10 o'clock - @ 5 ft.
COL-PWS-2004544	3/25/2019	1:21:01 PM	D	324.78	8	VCP	0000	3400	1	3	Roots medium - 10% - between 5 ft. - 26 ft.
COL-PWS-1008206	3/25/2019	10:25:51 AM	U	1.52	8	VCP	0000	0000	1	1	
COL-PWS-4014678	3/25/2019	9:03:27 AM	U	237.62	8	PVC	0000	0000	1	1	
COL-PWS-4014731	3/25/2019	9:51:58 AM	D	141.77	8	PVC	0000	0000	1	1	
COL-PWS-4014748	3/25/2019	9:59:55 AM	D	114.60	8	PVC	0000	0000	1	1	
COL-PWS-4017387	3/25/2019	11:59:57 AM	D	378.03	8	VCP	0000	0000	1	1	
COL-PWS-1007913	3/25/2019	8:39:36 AM	U	49.40	6	VCP	2100	0000	2	1	Fracture @ 44 ft.
COL-PWS-4017730	3/26/2019	8:55:00 AM	D	353.17	8	VCP	3100	3100	3	3	Medium roots joint - 105 - @ 133 ft. Fracture @ 345 ft.
COL-PWS-7009642	3/26/2019	3:00:45 PM	U	340.46	8	VCP	4732	0000	4	1	Fractures throughout line. Medium offset joint @ 153 ft. & 162 ft. Cracks throughout line.
COL-PWS-7009719	3/26/2019	11:22:49 AM	U	324.81	8	VCP	4934	3514	4	3	Multiple fractures and cracks throughout line.
COL-PWS-7009920	3/26/2019	1:56:46 PM	D	299.98	8	VCP	4434	3100	4	3	Fractures throughout line.
COL-PWS-7009925	3/26/2019	1:34:27 PM	D	197.12	8	VCP	4A12	3100	4	3	Fractures throughout line. Medium offset joint @ 65 ft. & 79 ft.
COL-PWS-7009981	3/26/2019	1:00:28 PM	U	158.20	8	VCP	4435	1200	4	1	Fractures throughout line.
COL-PWS-7009842	3/26/2019	11:59:26 AM	D	687.08	8	VCP	5142	3214	5	3	Broken pipe with soil visible @ 45 ft. Crack @ 9 ft. Multiple fractures @ 11 ft., & 19 ft. Large offset joint @ 159 ft. & 279 ft.
COL-PWS-7010065	3/26/2019	2:45:28 PM	U	131.61	8	VCP	5142	0000	5	1	Broken pipe @ 129 ft. Cracks @ 8 ft., 16 ft., 46 ft., 46 ft., 83 ft. & 96 ft. Multiple fractures @ 25 ft., 49 ft., 56 ft., & 120 ft.
COL-PWS-7009843	3/26/2019	10:55:34 AM	D	313.18	8	VCP	5141	2111	5	2	Broken pipe @ 230 ft. & 235 ft. Multiple fractures @ 27 ft., 31 ft. & 309 ft. Cracks @ 9 ft. Roots @ 8 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-7009864	3/26/2019	9:56:24 AM	D	228.11	8	VCP	5144	3111	5	3	Broken pipe @ 225 ft. Multiple fractures @ 4 ft., 26 ft., 36 ft., 39 ft., 225 ft. & 228 ft. Medium offset joint @ 103 ft. & 214 ft. Large offset joint @ 11 ft.
COL-PWS-7009878	3/26/2019	8:50:20 AM	U	140.11	8	VCP	5145	3121	5	3	Broken pipe @ 40 ft. Roots and fractures throughout line.
COL-PWS-7021820	3/26/2019	9:42:49 AM	D	89.27	8	VCP	5142	0000	5	1	Broken pipe @ 79 ft. Fractures @ 14 ft., 30 ft., 43 ft., 79 ft. & 83 ft.
COL-PWS-2012408	3/26/2019	11:34:00 AM	D	248.57	6	VCP	4B00	462B	4	4	Deposits attached encrustation - 10% - @ 120 ft. Water level - sag in pipe - 70% - between 124 ft. - 187 ft. Camera underwater between 145 ft. - 177 ft.
COL-PWS-2011779	3/26/2019	8:15:36 AM	D	264.39	8	VCP	4100	0000	4	1	Multiple fractures @ 272 ft.
COL-PWS-7009923	3/26/2019	1:53:09 PM	D	19.95	8	VCP	4200	0000	4	1	Multiple fractures @ 10 ft. & 12 ft.
COL-PWS-7009933	3/26/2019	9:30:59 AM	U	186.26	8	VCP	4211	0000	4	1	Multiple fractures @ 5 ft. & 169 ft. Medium offset joint @ 27 ft.
COL-PWS-7009538	3/26/2019	3:33:22 PM	U	337.13	8	VCP	5142	1100	5	1	Broken pipe soil visible @ 193 ft. Multiple fractures @ 6 ft., 10 ft. & 333 ft.
COL-PWS-2011841	3/26/2019	9:43:35 AM	D	25.03	8	PVC	0000	3100	1	3	Obstacles rocks - 20% - @ 25 ft.
COL-PWS-4016693	3/26/2019	7:39:24 AM	D	28.37	8	VCP	0000	4100	1	4	Deposits settled fine - 25% - @ 28 ft.
COL-PWS-2012085	3/26/2019	11:04:10 AM	D	650.19	6	VCP	0000	4121	1	4	Tap Factory Made Defective - 10 o'clock - @ 524 ft. Root ball at lateral - 90% - 10 o'clock - @ 524 ft.
COL-PWS-4014702	3/26/2019	10:32:12 AM	D	240.06	8	VCP	0000	4131	1	4	Medium roots barrel - 25% - @ 24 ft. Medium roots at joint @ 142 ft.
COL-PWS-4014845	3/26/2019	10:43:13 AM	D	112.43	8	VCP	0000	4132	1	4	Medium roots barrel - 20% - @ 58 ft. Medium roots at 82 ft. & 106 ft.
COL-PWS-4014977	3/26/2019	12:03:07 PM	U	35.99	8	PVC	0000	0000	1	1	
COL-PWS-2011456	3/26/2019	8:40:43 AM	D	267.04	8	PVC	0000	0000	1	1	
COL-PWS-2011606	3/26/2019	8:51:05 AM	D	164.05	8	PVC	0000	0000	1	1	
COL-PWS-2011710	3/26/2019	9:33:56 AM	U	222.31	8	PVC	0000	0000	1	1	
COL-PWS-2011767	3/26/2019	8:06:38 AM	D	300.06	8	VCP	0000	0000	1	1	
COL-PWS-2011887	3/26/2019	10:38:16 AM	D	302.03	8	VCP	0000	0000	1	1	
COL-PWS-2011930	3/26/2019	10:19:55 AM	D	82.00	8	VCP	0000	0000	1	1	
COL-PWS-2011931	3/26/2019	10:14:44 AM	U	104.08	8	VCP	0000	0000	1	1	
COL-PWS-2013914	3/26/2019	7:33:12 AM	D	326.10	8	VCP	0000	0000	1	1	
COL-PWS-4014056	3/26/2019	11:27:29 AM	U	144.99	8	PVC	0000	0000	1	1	
COL-PWS-4014878	3/26/2019	11:35:31 AM	D	289.26	8	PVC	0000	0000	1	1	
COL-PWS-4015040	3/26/2019	11:45:16 AM	D	282.38	8	PVC	0000	0000	1	1	
COL-PWS-4015176	3/26/2019	12:00:38 PM	D	162.84	8	PVC	0000	0000	1	1	
COL-PWS-4015181	3/26/2019	12:38:33 PM	D	281.54	8	VCP	0000	0000	1	1	
COL-PWS-4015214	3/26/2019	8:04:52 AM	U	151.80	8	VCP	0000	0000	1	1	
COL-PWS-4015380	3/26/2019	8:38:25 AM	U	256.17	8	VCP	0000	0000	1	1	
COL-PWS-4015478	3/26/2019	9:53:34 AM	U	150.79	8	VCP	0000	0000	1	1	
COL-PWS-4015537	3/26/2019	9:25:19 AM	D	294.97	8	VCP	0000	0000	1	1	
COL-PWS-4015557	3/26/2019	8:53:26 AM	D	205.04	8	VCP	0000	0000	1	1	
COL-PWS-4015646	3/26/2019	12:49:40 PM	D	292.37	8	VCP	0000	1C00	1	1	Fine roots @ 38 ft., 43 ft., 80 ft., 162 ft. & 230 ft.
COL-PWS-4015686	3/26/2019	9:02:09 AM	D	295.67	8	VCP	0000	1C00	1	1	Fine roots @ 139 ft., 150 ft. & 248 ft.
COL-PWS-4017485	3/26/2019	8:20:59 AM	U	235.09	8	VCP	0000	0000	1	1	
COL-PWS-4017647	3/26/2019	8:13:26 AM	U	120.52	8	VCP	0000	0000	1	1	
COL-PWS-7009530	3/26/2019	3:53:26 PM	U	22.29	8	VCP	0000	0000	1	1	
COL-PWS-7009698	3/26/2019	7:24:25 AM	D	381.72	8	PVC	0000	0000	1	1	
COL-PWS-7009745	3/26/2019	8:10:36 AM	D	181.38	8	PVC	0000	0000	1	1	
COL-PWS-7009770	3/26/2019	8:18:59 AM	D	138.45	8	PVC	0000	0000	1	1	
COL-PWS-7009787	3/26/2019	8:35:05 AM	U	153.22	8	PVC	0000	0000	1	1	
COL-PWS-7009849	3/26/2019	8:42:57 AM	D	33.15	8	PVC	0000	0000	1	1	
COL-PWS-7020840	3/26/2019	10:34:50 AM	U	93.77	8	PVC	0000	0000	1	1	
COL-PWS-2013508	3/26/2019	7:06:33 AM	D	83.22	8	VCP	2111	3100	2	3	Deposits settled fine - 15% - @ 0 ft. Medium offset joint 2 9 ft. Large offset joint @ 82 ft.
COL-PWS-4016632	3/26/2019	7:29:04 AM	U	86.49	8	VCP	2100	3100	2	3	Fracture @ 33 ft. Deposits settled fine - 20% - @ 86 ft.
COL-PWS-4014990	3/26/2019	10:50:35 AM	D	188.58	8	VCP	2100	4235	2	4	Roots throughout line. Fracture @ 185 ft.
COL-PWS-4014660	3/26/2019	10:00:04 AM	U	228.07	8	PVC	0000	0000	1	1	
COL-PWS-4014792	3/26/2019	9:41:22 AM	D	414.40	8	PVC	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-2013508	3/26/2019	7:23:13 AM	U	240.11	8	VCP	2111	0000	2	1	Medium offset joint @ 233 ft. Large offset joint @ 240 ft.
COL-PWS-7010065	3/26/2019	2:37:10 PM	D	10.56	8	VCP	2100	0000	2	1	Fracture @ 1 ft.
COL-PWS-4014948	3/27/2019	11:12:32 AM	D	347.12	8	VCP	3100	3100	3	3	Fracture @ 229 ft. Medium roots @ 319 ft.
COL-PWS-7009424	3/27/2019	8:28:52 AM	U	145.10	8	VCP	4135	1100	4	1	Multiple cracks throughout line. Fine roots @ 60 ft.
COL-PWS-7009468	3/27/2019	7:29:29 AM	U	206.60	8	VCP	4534	1300	4	1	Fractures & roots throughout line. Large offset @ 143 ft. Medium offset @ 147 ft.
COL-PWS-7011669	3/27/2019	10:31:28 AM	D	293.13	8	VCP	4500	3111	4	3	Multiple fractures @ 172 ft., 228 ft., 234 ft., 238 ft., 286 ft., & 289 ft. Fine roots @ 173 ft. Medium roots @ 206 ft.
COL-PWS-7011151	3/27/2019	11:49:52 AM	U	142.56	8	VCP	5142	3311	5	3	Broken pipe @ 23 ft. Multiple fractures @ 18 ft. & 96 ft. Roots @ 103 ft., 112 ft. 124 ft. & 140 ft.
COL-PWS-7011283	3/27/2019	11:03:39 AM	U	57.98	8	VCP	5342	3312	5	3	Broken pipe @ 26 ft., 37 ft., 53 ft. & 57 ft. Collapsed pipe @ 57 ft.
COL-PWS-7009469	3/27/2019	8:41:31 AM	U	69.03	8	VCP	5142	4100	5	1	Broken pipe @ 12ft. Multiple fractures @ 5 ft., 9 ft. & 39 ft. Medium offset @ 67 ft.
COL-PWS-7009388	3/27/2019	8:59:22 AM	D	392.18	8	VCP	5341	0000	5	1	Broken pipe @ 173 ft., 256 ft. & 349 ft. Medium offset @ 6 ft. Crack @ 7 ft. Fractures @ 11 ft., 18 ft., & 388 ft.
COL-PWS-7010867	3/27/2019	12:18:09 PM	U	73.23	8	VCP	5141	1500	5	1	Broken pipe @ 21 ft. Multiple fractures @ 69 ft. Roots @ 17 ft., 21 ft., 35 ft., 38 ft. & 44 ft.
COL-PWS-7010877	3/27/2019	12:33:27 PM	D	274.26	8	VCP	5143	2100	5	2	Broken pipe @ 150 ft. C racks @ 13 ft., 19 ft., 23 ft. , 28 ft., & 100 ft. Fractures @ 6 ft., 100 ft., & 270 ft.
COL-PWS-4014485	3/27/2019	10:19:48 AM	U	446.10	8	RPM	5100	0000	5	1	Hole in pipe @ 181 ft.
COL-PWS-4014598	3/27/2019	11:22:05 AM	D	97.93	8	VCP	0000	4233	1	4	Deposits attached grease - 15% - between 72 ft. - 87 ft. Camera underwater between 87 ft. - 97 ft.
COL-PWS-2020365	3/27/2019	7:58:35 AM	D	297.98	8	VCP	0000	3100	1	3	Medium roots at joint @ 285 ft.
COL-PWS-4015184	3/27/2019	11:30:36 AM	D	229.53	8	VCP	1100	3111	1	3	Medium roots @ 119 ft. Fine roots @ 170 ft. Medium offset @ 228 ft.
COL-PWS-7011648	3/27/2019	10:02:12 AM	U	114.50	8	VCP	1100	3413	1	3	Medium offset @ 5 ft. Roots throughout line.
COL-PWS-2000366	3/27/2019	8:26:13 AM	U	340.49	8	VCP	0000	2C00	1	2	Deposits attached encrustation - 5% - between 235 ft. - 336 ft.
COL-PWS-2002344	3/27/2019	9:40:36 AM	D	294.57	10	PVC	0000	0000	1	1	
COL-PWS-2002522	3/27/2019	9:22:25 AM	D	124.52	10	PVC	0000	0000	1	1	
COL-PWS-2004503	3/27/2019	10:33:16 AM	D	217.05	8	VCP	1100	1100	1	1	Medium offset @ 70 ft. Fine roots @ 85 ft.
COL-PWS-2004505	3/27/2019	10:25:22 AM	D	166.64	8	VCP	0000	0000	1	1	
COL-PWS-4010427	3/27/2019	12:46:31 PM	D	143.66	8	RPM	0000	0000	1	1	
COL-PWS-4010572	3/27/2019	12:15:06 PM	U	292.25	8	RPM	0000	0000	1	1	
COL-PWS-4013063	3/27/2019	8:51:43 AM	D	146.17	8	PVC	0000	0000	1	1	
COL-PWS-4013099	3/27/2019	9:02:07 AM	D	406.08	8	RPM	0000	0000	1	1	
COL-PWS-4013207	3/27/2019	7:10:21 AM	D	186.70	8	RPM	0000	0000	1	1	
COL-PWS-4013229	3/27/2019	11:41:16 AM	U	247.31	8	VCP	0000	2100	1	2	Deposits settled fine - 10% - @ 0 ft.
COL-PWS-4013282	3/27/2019	7:41:12 AM	U	121.00	8	RPM	0000	0000	1	1	
COL-PWS-4013336	3/27/2019	7:51:10 AM	D	303.28	8	RPM	0000	0000	1	1	
COL-PWS-4014072	3/27/2019	9:58:15 AM	D	191.12	8	VCP	0000	0000	1	1	
COL-PWS-4014129	3/27/2019	10:49:17 AM	U	147.39	8	RPM	0000	0000	1	1	
COL-PWS-4014458	3/27/2019	11:06:34 AM	D	190.42	8	VCP	0000	0000	1	1	
COL-PWS-4014558	3/27/2019	10:33:23 AM	U	100.62	8	RPM	0000	0000	1	1	
COL-PWS-4015358	3/27/2019	11:47:19 AM	D	338.35	8	VCP	1100	0000	1	1	Medium offset @ 253 ft.
COL-PWS-4015555	3/27/2019	12:51:44 PM	D	195.31	8	VCP	1300	0000	1	1	Medium offset @ 46 ft., 52 ft. & 167 ft.
COL-PWS-4015558	3/27/2019	1:45:06 PM	D	293.98	8	VCP	1200	2200	1	2	Medium offset @ 173 ft. & 178 ft. Deposits attached grease - 10% - between 286 ft. - 293 ft.
COL-PWS-4015577	3/27/2019	2:09:50 PM	U	130.27	8	VCP	0000	0000	1	1	
COL-PWS-4015594	3/27/2019	1:03:13 PM	D	155.91	8	VCP	0000	0000	1	1	
COL-PWS-4015647	3/27/2019	1:09:06 PM	D	240.06	8	VCP	0000	0000	1	1	
COL-PWS-4017973	3/27/2019	9:31:15 AM	D	337.14	8	RPM	0000	0000	1	1	
COL-PWS-7010757	3/27/2019	2:05:47 PM	U	166.90	8	PVC	0000	0000	1	1	
COL-PWS-7010797	3/27/2019	2:25:33 PM	D	177.17	8	PVC	0000	0000	1	1	
COL-PWS-7010856	3/27/2019	2:13:03 PM	U	202.89	8	PVC	0000	0000	1	1	
COL-PWS-4010438	3/27/2019	12:31:18 PM	D	318.12	8	RPM	2300	0000	2	1	Water level - sag in pipe - 30% - between 269 ft. - 284 ft.
COL-PWS-7010825	3/27/2019	1:35:19 PM	D	194.18	8	PVC	2100	0000	2	1	Water level - 5% - @ 72 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-7010955	3/27/2019	1:20:58 PM	D	353.37	8	PVC	2200	0000	2	1	Water level - 5% - @ 146 ft. & 288 ft.
COL-PWS-7009469	3/27/2019	8:11:09 AM	D	56.61	8	VCP	3100	4100	3	4	Spiral fracture @ 9 ft. Alignment left - 45% @ 56 ft.
COL-PWS-7011151	3/27/2019	11:29:57 AM	D	108.63	8	VCP	4232	4132	4	4	Fractures @ 11 ft., 28 ft., & 38 ft. Cracks @ 74 ft. & 89 ft. Roots @ 53 ft., 74 ft., 80 ft., & 107 ft.
COL-PWS-2003281	3/27/2019	6:57:30 AM	U	132.32	8	VCP	0000	0000	1	1	
COL-PWS-2003291	3/27/2019	7:14:55 AM	D	265.41	8	VCP	0000	0000	1	1	
COL-PWS-4012811	3/27/2019	8:19:52 AM	D	421.00	8	RPM	0000	0000	1	1	
COL-PWS-4015490	3/27/2019	12:36:52 PM	U	195.99	8	VCP	1200	0000	1	1	Medium offset @ 57 ft. & 59 ft.
COL-PWS-6016433	3/28/2019	11:01:37 AM	D	276.02	12	VCP	4112	0000	4	1	Multiple fracture @ 20 ft. Crack @ 93 ft. & 263 ft.
COL-PWS-4016664	3/28/2019	1:16:33 PM	D	176.39	8	VCP	0000	4200	1	4	Alignment down - 35% @ 150 ft. Alignment down - 90% - @ 175 ft.
COL-PWS-4016060	3/28/2019	8:36:43 AM	D	199.21	8	VCP	0000	423B	1	4	Roots throughout line.
COL-PWS-6016040	3/28/2019	10:31:26 AM	D	290.04	12	VCP	3111	0000	3	1	Crack @ 237 ft. Fracture @ 283 ft.
COL-PWS-4015621	3/28/2019	7:30:25 AM	D	24.66	8	VCP	4100	0000	4	1	Water level - sag in pipe - 85% - between 21 ft. - 24 ft.
COL-PWS-6016416	3/28/2019	11:59:22 AM	D	248.21	12	VCP	513A	4600	5	4	Broken pipe @ 242 ft. Water Level - sag in pipe - 50% - between 119 ft. - 153 ft. Water Level - sag in pipe - 45% - between 222 ft. - 245 ft. Camera underwater between 128 ft. - 153 ft. & 241 ft. - 245 ft.
COL-PWS-4016471	3/28/2019	9:20:50 AM	D	175.71	8	VCP	0000	4111	1	4	Roots @ 22 ft. & 50 ft.
COL-PWS-4016558	3/28/2019	1:05:50 PM	D	166.54	8	VCP	0000	3200	1	3	Medium roots @ 25 ft. & 31 ft.
COL-PWS-4016890	3/28/2019	9:34:36 AM	U	92.05	8	VCP	0000	3500	1	3	Roots 2 26 ft., 34 ft., 39 ft., 69 ft. & 88 ft.
COL-PWS-4017122	3/28/2019	10:35:53 AM	U	177.95	8	VCP	0000	3100	1	3	Medium roots @ 157 ft.
COL-PWS-4017183	3/28/2019	11:00:05 AM	D	321.87	8	VCP	0000	3121	1	3	Medium roots @ 291 ft. Tap Factory Made Defective - 10 o'clock - @ 296 ft.
COL-PWS-6013242	3/28/2019	9:43:53 AM	U	290.08	8	VCP	0000	4131	1	4	Obstacles pipe material - 25% - @ 210 ft. Medium roots @ 273 ft.
COL-PWS-6013250	3/28/2019	9:55:15 AM	U	4.20	8	VCP	0000	5100	1	5	Roots balls - 55% - between 0 ft. - 4.19 ft.
COL-PWS-4015780	3/28/2019	9:36:13 AM	D	0.00	8	VCP	0000	0000	1	1	
COL-PWS-4017820	3/28/2019	12:24:07 PM	D	89.12	8	VCP	1100	0000	1	1	Medium offset @ 46 ft.
COL-PWS-4015059	3/28/2019	12:46:51 PM	U	282.84	8	PVC	0000	0000	1	1	
COL-PWS-4015206	3/28/2019	1:14:47 PM	D	176.86	8	PVC	0000	0000	1	1	
COL-PWS-4015312	3/28/2019	1:32:57 PM	U	167.04	8	PVC	0000	0000	1	1	
COL-PWS-4015435	3/28/2019	7:39:04 AM	U	291.26	8	PVC	0000	0000	1	1	
COL-PWS-4015443	3/28/2019	10:20:39 AM	D	262.99	8	VCP	0000	0000	1	1	
COL-PWS-4015526	3/28/2019	7:17:27 AM	U	160.02	8	VCP	0000	0000	1	1	
COL-PWS-4015593	3/28/2019	8:29:10 AM	U	297.88	8	PVC	0000	0000	1	1	
COL-PWS-4015699	3/28/2019	12:03:05 PM	D	338.89	8	VCP	0000	0000	1	1	
COL-PWS-4015903	3/28/2019	12:16:07 PM	D	245.84	8	VCP	0000	0000	1	1	
COL-PWS-4015920	3/28/2019	7:12:09 AM	D	365.55	8	VCP	0000	0000	1	1	
COL-PWS-4016007	3/28/2019	9:03:23 AM	U	391.53	8	VCP	0000	0000	1	1	
COL-PWS-4016112	3/28/2019	2:15:28 PM	D	210.35	8	VCP	0000	0000	1	1	
COL-PWS-4016216	3/28/2019	2:27:19 PM	U	174.36	8	VCP	0000	0000	1	1	
COL-PWS-4016234	3/28/2019	7:31:18 AM	D	261.71	8	VCP	0000	2G00	1	2	Deposits attached encrustation - 5% - between 51 ft. - 261 ft.
COL-PWS-4016290	3/28/2019	7:48:12 AM	D	315.92	8	VCP	0000	2600	1	2	Deposits attached encrustation - 10% - between 143 ft. - 173 ft.
COL-PWS-4016414	3/28/2019	12:56:19 PM	D	219.58	8	VCP	0000	0000	1	1	
COL-PWS-4016910	3/28/2019	9:57:20 AM	D	162.35	8	VCP	0000	0000	1	1	
COL-PWS-4017045	3/28/2019	10:03:44 AM	D	222.32	8	VCP	0000	0000	1	1	
COL-PWS-4017422	3/28/2019	11:14:44 AM	U	294.37	8	VCP	0000	0000	1	1	
COL-PWS-4017625	3/28/2019	11:38:40 AM	D	128.42	8	VCP	0000	0000	1	1	
COL-PWS-4017705	3/28/2019	11:54:14 AM	U	104.53	8	VCP	0000	0000	1	1	
COL-PWS-4017711	3/28/2019	11:48:59 AM	D	92.34	8	VCP	0000	0000	1	1	
COL-PWS-4017775	3/28/2019	12:07:58 PM	D	200.38	8	VCP	0000	0000	1	1	
COL-PWS-6013713	3/28/2019	8:11:02 AM	D	276.56	8	VCP	0000	0000	1	1	
COL-PWS-6013784	3/28/2019	9:13:54 AM	U	213.08	8	VCP	0000	0000	1	1	
COL-PWS-6013808	3/28/2019	9:25:14 AM	U	168.05	8	VCP	0000	0000	1	1	
COL-PWS-6013822	3/28/2019	8:40:19 AM	U	186.25	8	VCP	0000	0000	1	1	
COL-PWS-6013844	3/28/2019	8:48:01 AM	D	222.75	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-6013881	3/28/2019	8:20:07 AM	D	241.54	8	VCP	0000	2200	1	2	Deposits attached grease - 10% - between 203 ft. - 213 ft.
COL-PWS-6014030	3/28/2019	7:19:44 AM	U	184.08	8	VCP	0000	0000	1	1	
COL-PWS-6014034	3/28/2019	7:30:44 AM	U	233.51	8	VCP	0000	0000	1	1	
COL-PWS-6014106	3/28/2019	7:06:20 AM	D	144.06	8	VCP	0000	0000	1	1	
COL-PWS-6014183	3/28/2019	7:54:00 AM	D	278.08	8	VCP	0000	0000	1	1	
COL-PWS-6014244	3/28/2019	7:46:59 AM	D	169.03	8	RPM	0000	0000	1	1	
COL-PWS-6015422	3/28/2019	11:29:35 AM	U	296.31	12	VCP	0000	0000	1	1	
COL-PWS-6015858	3/28/2019	10:23:35 AM	D	280.11	12	VCP	1100	0000	1	1	Crack @ 50 ft.
COL-PWS-6016230	3/28/2019	10:40:27 AM	D	270.89	12	VCP	0000	0000	1	1	
COL-PWS-6016415	3/28/2019	10:56:59 AM	D	20.12	12	VCP	0000	0000	1	1	
COL-PWS-7010422	3/28/2019	3:12:37 PM	U	58.08	8	PVC	0000	0000	1	1	
COL-PWS-7010456	3/28/2019	3:20:06 PM	D	125.15	8	PVC	0000	0000	1	1	
COL-PWS-7010457	3/28/2019	2:56:40 PM	U	90.25	8	PVC	0000	0000	1	1	
COL-PWS-7010504	3/28/2019	1:18:30 PM	D	182.35	8	PVC	0000	0000	1	1	
COL-PWS-7010526	3/28/2019	1:12:54 PM	D	77.05	8	PVC	0000	0000	1	1	
COL-PWS-7010555	3/28/2019	1:01:22 PM	D	92.30	8	PVC	0000	0000	1	1	
COL-PWS-7010574	3/28/2019	2:48:29 PM	D	124.67	8	PVC	0000	0000	1	1	
COL-PWS-7010579	3/28/2019	12:47:59 PM	D	94.16	8	PVC	0000	0000	1	1	
COL-PWS-7010593	3/28/2019	2:34:02 PM	U	77.54	8	PVC	0000	0000	1	1	
COL-PWS-7010598	3/28/2019	12:43:06 PM	D	75.29	8	PVC	0000	0000	1	1	
COL-PWS-7010601	3/28/2019	10:30:09 AM	U	89.47	8	PVC	0000	0000	1	1	
COL-PWS-7010618	3/28/2019	12:38:11 PM	D	45.17	8	PVC	0000	0000	1	1	
COL-PWS-7010623	3/28/2019	2:26:18 PM	D	125.35	8	PVC	0000	0000	1	1	
COL-PWS-7010633	3/28/2019	11:41:48 AM	U	44.88	8	PVC	0000	0000	1	1	
COL-PWS-7010645	3/28/2019	1:58:16 PM	D	106.38	8	PVC	0000	0000	1	1	
COL-PWS-7010648	3/28/2019	2:06:02 PM	U	75.09	8	PVC	0000	0000	1	1	
COL-PWS-7010658	3/28/2019	2:19:37 PM	U	66.78	8	PVC	0000	0000	1	1	
COL-PWS-7010672	3/28/2019	1:49:43 PM	U	81.35	8	PVC	0000	0000	1	1	
COL-PWS-7010689	3/28/2019	11:58:26 AM	U	112.44	8	PVC	0000	0000	1	1	
COL-PWS-7010694	3/28/2019	10:35:43 AM	U	85.36	8	PVC	0000	0000	1	1	
COL-PWS-7010705	3/28/2019	8:02:46 AM	D	293.13	8	VCP	0000	0000	1	1	
COL-PWS-7010730	3/28/2019	11:29:19 AM	D	134.25	8	PVC	0000	0000	1	1	
COL-PWS-7010733	3/28/2019	7:57:09 AM	D	88.19	8	VCP	0000	0000	1	1	
COL-PWS-7010752	3/28/2019	11:21:04 AM	U	77.05	8	PVC	0000	0000	1	1	
COL-PWS-7010767	3/28/2019	9:03:51 AM	U	86.92	8	PVC	0000	0000	1	1	
COL-PWS-7010789	3/28/2019	7:35:12 AM	U	209.63	8	VCP	0000	0000	1	1	
COL-PWS-7010795	3/28/2019	9:30:32 AM	D	135.52	8	PVC	0000	0000	1	1	
COL-PWS-7010817	3/28/2019	9:21:34 AM	U	80.08	8	PVC	0000	0000	1	1	
COL-PWS-6015646	3/28/2019	10:14:07 AM	D	272.08	12	VCP	2111	0000	2	1	Fracture @ 197 ft. Crack @ 253 ft.
COL-PWS-7010582	3/28/2019	1:29:26 PM	U	159.96	8	PVC	2100	0000	2	1	Water level - sag in pipe - 10% - @ 30 ft.
COL-PWS-7010617	3/28/2019	12:04:57 PM	U	48.11	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - @ 26 ft.
COL-PWS-7010682	3/28/2019	9:39:22 AM	D	336.84	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - @ 122 ft.
COL-PWS-4015780	3/28/2019	9:36:13 AM	U	3.21	8	VCP	0000	0000	1	1	
COL-PWS-4016269	3/28/2019	9:05:36 AM	D	175.02	8	VCP	0000	0000	1	1	
COL-PWS-4017820	3/28/2019	12:19:59 PM	D	86.10	8	VCP	0000	0000	1	1	
COL-PWS-5017588	3/29/2019	11:30:50 AM	D	830.74	12	VCP	5241	0000	5	1	Broken pipe @ 264 ft. & 268 ft. Crack @ 473 ft. Fractures @ 632 ft., 690 ft., 702 ft., 718 ft., 763 ft., 192 ft. & 808 ft.
COL-PWS-5016328	3/29/2019	8:31:40 AM	D	277.15	12	VCP	4300	0000	4	1	Multiple fractures @ 10 ft., 22 ft. & 193 ft.
COL-PWS-5016703	3/29/2019	8:53:49 AM	D	788.25	12	VCP	4131	1500	4	1	Cracks @ 111 ft., 173 ft. & 708 ft. Fractures @ 161 ft., 475 ft., 491 ft., 503 ft., 593 ft. & 671 ft. Roots @ 720 ft., 741 ft., 749 ft., 761 ft. & 769 ft.
COL-PWS-5017005	3/29/2019	9:37:33 AM	D	275.22	12	VCP	4123	0000	4	1	Fractures @ 22 ft., 140 ft., 169 ft. & 230 ft.
COL-PWS-6021760	3/29/2019	10:35:37 AM	D	300.06	12	VCP	3100	1100	3	1	Fine roots @ 268 ft.
COL-PWS-4017502	3/29/2019	9:28:19 AM	D	314.07	8	VCP	0000	3F11	1	3	Roots throughout line.
COL-PWS-4000058	3/29/2019	10:54:00 AM	D	325.18	8	VCP	4100	3100	4	3	Multiple fractures @ 67 ft. Medium roots @ 141 ft.
COL-PWS-5017746	3/29/2019	12:39:59 PM	U	317.30	8	VCP	0000	4B00	1	4	Camera underwater - between 0 ft. - 65 ft.
COL-PWS-4020439	3/29/2019	9:22:19 AM	U	14.33	8	VCP	0000	3300	1	3	Medium roots @ 0 ft., 11 ft. & 14 ft.
COL-PWS-4015945	3/29/2019	12:46:31 PM	D	217.83	8	VCP	0000	3200	1	3	Medium roots @ 101 ft. & 159 ft.
COL-PWS-4016944	3/29/2019	8:35:15 AM	U	211.98	8	VCP	0000	3111	1	3	Roots @ 149 ft. & 180 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4016970	3/29/2019	7:28:36 AM	D	241.91	8	VCP	0000	3411	1	3	Roots @ 41 ft., 180 ft., 197 ft., 201ft. & 216 ft.
COL-PWS-4017143	3/29/2019	8:07:19 AM	D	312.22	8	VCP	0000	3412	1	3	Roots throughout line.
COL-PWS-4017581	3/29/2019	10:22:53 AM	D	352.10	8	VCP	0000	3100	1	3	Medium roots @ 341 ft.
COL-PWS-4017716	3/29/2019	9:49:38 AM	D	233.24	8	VCP	0000	3100	1	3	Medium roots @ 159 ft.
COL-PWS-4017842	3/29/2019	10:42:25 AM	D	246.11	8	VCP	0000	3311	1	3	Roots @ 96 ft., 100 ft., 108 ft. & 190 ft.
COL-PWS-4000298	3/29/2019	10:57:05 AM	D	27.79	8	VCP	0000	2100	1	2	Deposits attached compacted - 10% - @ 27 ft.
COL-PWS-4015999	3/29/2019	8:36:30 AM	D	191.40	8	VCP	0000	0000	1	1	
COL-PWS-7010240	3/29/2019	11:43:36 AM	D	28.26	8	PVC	0000	0000	1	1	
COL-PWS-7010294	3/29/2019	1:53:43 PM	D	162.51	8	PVC	0000	0000	1	1	
COL-PWS-2000481	3/29/2019	11:49:11 AM	D	230.02	8	VCP	0000	1400	1	1	Roots @ 49 ft., 64 ft., 95 ft. & 99 ft.
COL-PWS-2016620	3/29/2019	12:34:00 PM	D	220.88	8	VCP	0000	0000	1	1	
COL-PWS-2016621	3/29/2019	12:04:46 PM	D	360.84	8	VCP	0000	0000	1	1	
COL-PWS-2016636	3/29/2019	11:33:28 AM	U	112.39	8	VCP	0000	0000	1	1	
COL-PWS-2016678	3/29/2019	11:44:05 AM	D	47.32	8	VCP	0000	0000	1	1	
COL-PWS-3000100	3/29/2019	1:32:44 PM	D	247.96	8	VCP	0000	0000	1	1	
COL-PWS-4015245	3/29/2019	9:26:48 AM	D	170.75	8	VCP	0000	0000	1	1	
COL-PWS-4015610	3/29/2019	12:32:25 PM	D	128.61	8	VCP	0000	0000	1	1	
COL-PWS-4015717	3/29/2019	12:37:36 PM	D	313.00	8	VCP	0000	0000	1	1	
COL-PWS-4016849	3/29/2019	8:52:23 AM	U	309.29	8	VCP	0000	1100	1	1	Fine roots @ 188 ft.
COL-PWS-4017553	3/29/2019	10:00:27 AM	U	50.51	8	VCP	0000	0000	1	1	
COL-PWS-5016178	3/29/2019	10:03:07 AM	U	285.03	12	VCP	0000	0000	1	1	
COL-PWS-5017845	3/29/2019	1:10:56 PM	U	241.82	8	RPM	0000	0000	1	1	
COL-PWS-7010093	3/29/2019	3:33:19 PM	D	222.05	8	PVC	0000	0000	1	1	
COL-PWS-7010122	3/29/2019	3:24:50 PM	U	96.70	8	PVC	0000	0000	1	1	
COL-PWS-7010126	3/29/2019	2:39:07 PM	U	33.54	8	PVC	0000	0000	1	1	
COL-PWS-7010133	3/29/2019	2:49:54 PM	D	78.81	8	PVC	0000	0000	1	1	
COL-PWS-7010145	3/29/2019	2:23:07 PM	U	150.87	8	PVC	0000	0000	1	1	
COL-PWS-7010166	3/29/2019	3:06:32 PM	U	169.45	8	PVC	0000	0000	1	1	
COL-PWS-7010169	3/29/2019	2:57:13 PM	D	197.80	8	PVC	0000	0000	1	1	
COL-PWS-7010182	3/29/2019	2:14:29 PM	U	154.00	8	PVC	0000	0000	1	1	
COL-PWS-7010200	3/29/2019	1:44:28 PM	D	156.83	8	PVC	0000	0000	1	1	
COL-PWS-7010253	3/29/2019	1:36:51 PM	D	108.83	8	PVC	0000	0000	1	1	
COL-PWS-7010282	3/29/2019	1:24:48 PM	U	55.05	8	PVC	0000	0000	1	1	
COL-PWS-7010331	3/29/2019	11:35:39 AM	D	130.24	8	PVC	0000	0000	1	1	
COL-PWS-7010332	3/29/2019	11:11:05 AM	U	45.96	8	PVC	0000	0000	1	1	
COL-PWS-7010371	3/29/2019	8:29:39 AM	U	157.32	8	PVC	0000	0000	1	1	
COL-PWS-7010382	3/29/2019	9:43:58 AM	D	31.00	8	PVC	0000	0000	1	1	
COL-PWS-7010387	3/29/2019	11:19:03 AM	D	194.87	8	PVC	0000	0000	1	1	
COL-PWS-7010405	3/29/2019	9:00:22 AM	U	54.46	8	PVC	0000	0000	1	1	
COL-PWS-7010414	3/29/2019	8:44:51 AM	U	76.66	8	PVC	0000	0000	1	1	
COL-PWS-7010461	3/29/2019	8:07:29 AM	U	88.59	8	PVC	0000	0000	1	1	
COL-PWS-7010471	3/29/2019	9:19:43 AM	U	235.15	8	PVC	0000	0000	1	1	
COL-PWS-7010494	3/29/2019	7:28:56 AM	U	90.05	8	PVC	0000	0000	1	1	
COL-PWS-7010495	3/29/2019	8:20:49 AM	D	135.32	8	PVC	0000	0000	1	1	
COL-PWS-7010538	3/29/2019	7:54:05 AM	D	123.69	8	PVC	0000	0000	1	1	
COL-PWS-7010560	3/29/2019	7:36:46 AM	U	79.10	8	PVC	0000	0000	1	1	
COL-PWS-7010850	3/29/2019	10:59:44 AM	U	115.96	8	PVC	0000	0000	1	1	
COL-PWS-5017123	3/29/2019	10:24:56 AM	D	266.13	12	VCP	2100	0000	2	1	Fracture @ 35 ft.
COL-PWS-7010231	3/29/2019	12:01:31 PM	D	267.42	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - @ 24 ft.
COL-PWS-7010273	3/29/2019	11:53:49 AM	D	114.11	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - @ 27 ft.
COL-PWS-7010290	3/29/2019	12:29:11 PM	U	91.71	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - @ 70 ft.
COL-PWS-7010436	3/29/2019	9:08:33 AM	D	158.79	8	PVC	2100	0000	2	1	Water level - sag in pipe - 10% - @ 149 ft.
COL-PWS-5017588	3/29/2019	10:53:43 AM	D	160.51	12	VCP	0000	5141	1	5	Deposits attached grease - 35% - @ 159 ft. Deposits attached grease - 30% - @ 142 ft. Roots 2 4 ft., 70 ft., 94 ft. & 160 ft.
COL-PWS-5017588	3/29/2019	12:10:11 PM	U	229.90	12	VCP	5200	4100	5	4	Broken pipe @ 86 ft. Hole in pipe - void visible - @ 88 ft. Root ball @ 229 ft.
COL-PWS-4016083	3/29/2019	1:12:08 PM	D	13.65	8	VCP	0000	3100	1	3	Deposits settled other - 20% - @ 13 ft.
COL-PWS-4020439	3/29/2019	8:19:10 AM	D	185.17	8	VCP	0000	3111	1	3	Roots @ 32 ft. & 183 ft.
COL-PWS-4000298	3/29/2019	11:26:41 AM	U	321.67	8	VCP	0000	1D00	1	1	Roots @ 14 ft., 24 ft. & 145 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4015999	3/29/2019	8:36:30 AM	U	42.61	8	VCP	0000	0000	1	1	
COL-PWS-7010294	3/29/2019	11:48:03 AM	D	85.16	8	PVC	0000	0000	1	1	
COL-PWS-3002010	4/1/2019	10:34:47 AM	D	177.07	8	VCP	0000	3A00	1	3	Medium roots throughout line.
COL-PWS-3001966	4/1/2019	9:18:29 AM	D	220.75	8	VCP	3100	3500	3	3	
COL-PWS-3002357	4/1/2019	11:54:11 AM	D	316.02	8	VCP	4233	3300	4	3	Deposits settled fine - 15% - between 229 ft. - 240 ft. Fractures @ 249 ft., 258 t., 271 ft., 279 ft. & 289 ft. Deposits settled fine - 15% - @ 313 ft.
COL-PWS-3002588	4/1/2019	1:45:02 PM	D	278.77	8	VCP	5141	3121	5	3	Broken pipe @ 179 ft. Multiple fractures @ 175 ft. Tap Break-in intruding - 2 o'clock - @ 242 ft. Obstacles other - 15% - @ 277 ft.
COL-PWS-1015063	4/1/2019	10:22:25 AM	U	107.52	18	VCP	0000	4100	1	4	Deposits attached grease - 25% - @ 106 ft.
COL-PWS-1008131	4/1/2019	12:19:32 PM	D	228.00	36	VCP	0000	3100	1	3	Deposits settled other - 15% - @ 204 ft.
COL-PWS-3002270	4/1/2019	12:01:36 PM	U	333.96	8	VCP	0000	3200	1	3	Medium roots @ 73 ft. & 236 ft.
COL-PWS-3002402	4/1/2019	1:26:20 PM	D	291.35	8	VCP	0000	3222	1	3	Medium roots @ 15 ft. Fine roots @ 21 ft. & 24 ft. Tap Break-in intruding - 3 o'clock - @ 206 ft. Tap Break-in intruding - 11 o'clock - @ 196 ft. Tap Break-in intruding - 12 o'clock - @ 211 ft.
COL-PWS-1008372	4/1/2019	11:10:25 AM	D	462.18	27	VCP	0000	0000	1	1	
COL-PWS-1007975	4/1/2019	9:20:09 AM	D	340.17	36	VCP	0000	0000	1	1	
COL-PWS-1008025	4/1/2019	8:04:27 AM	D	616.56	36	VCP	0000	0000	1	1	
COL-PWS-1008035	4/1/2019	8:53:34 AM	D	348.16	36	VCP	0000	0000	1	1	
COL-PWS-1008037	4/1/2019	7:52:16 AM	D	440.02	36	VCP	0000	0000	1	1	
COL-PWS-1008194	4/1/2019	12:06:08 PM	D	463.39	36	VCP	0000	0000	1	1	
COL-PWS-1008202	4/1/2019	11:39:01 AM	D	18.12	36	VCP	0000	0000	1	1	
COL-PWS-1017981	4/1/2019	7:31:57 AM	D	388.03	36	VCP	0000	0000	1	1	
COL-PWS-1018064	4/1/2019	9:01:50 AM	D	604.37	36	VCP	0000	0000	1	1	
COL-PWS-3001741	4/1/2019	7:49:43 AM	D	379.11	8	PVC	0000	0000	1	1	
COL-PWS-3001742	4/1/2019	7:26:29 AM	U	202.72	8	PVC	0000	0000	1	1	
COL-PWS-3001991	4/1/2019	8:14:21 AM	D	377.45	8	PVC	0000	0000	1	1	
COL-PWS-3002118	4/1/2019	11:02:56 AM	D	315.04	8	VCP	0000	2113	1	2	Fine roots @ 180 ft., 192 ft. & 219 ft.
COL-PWS-7009635	4/1/2019	3:20:27 PM	D	172.18	8	PVC	0000	0000	1	1	
COL-PWS-7009705	4/1/2019	2:38:53 PM	U	147.06	8	PVC	0000	0000	1	1	
COL-PWS-7009801	4/1/2019	2:20:37 PM	D	304.67	8	PVC	0000	0000	1	1	
COL-PWS-7009908	4/1/2019	12:38:13 PM	D	181.18	8	PVC	0000	0000	1	1	
COL-PWS-7009965	4/1/2019	11:16:32 AM	U	165.63	8	PVC	0000	0000	1	1	
COL-PWS-7010046	4/1/2019	10:11:50 AM	U	82.13	8	PVC	0000	0000	1	1	
COL-PWS-7010069	4/1/2019	11:26:57 AM	U	320.22	8	PVC	0000	0000	1	1	
COL-PWS-7010271	4/1/2019	8:43:41 AM	U	157.23	8	PVC	0000	0000	1	1	
COL-PWS-7010323	4/1/2019	8:19:33 AM	U	64.04	8	PVC	0000	0000	1	1	
COL-PWS-1007963	4/1/2019	10:01:13 AM	D	156.65	18	VCP	2300	0000	2	1	Water level - sag in pipe - 30% - between 141 ft. - 156 ft.
COL-PWS-7009874	4/1/2019	12:54:39 PM	D	212.37	8	PVC	2200	0000	2	1	Water level - sag in pipe - 10% - between 151 ft. - 194 ft. Water level - sag in pipe - 5% - @ 211 ft.
COL-PWS-7009971	4/1/2019	12:05:58 PM	D	356.30	8	PVC	2200	0000	2	1	Water level - sag in pipe - 5% - @ 55 ft. Water level - sag in pipe - 5% - @ 154 ft.
COL-PWS-7009983	4/1/2019	11:49:15 AM	D	259.70	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - @ 251 ft.
COL-PWS-7010062	4/1/2019	10:39:07 AM	D	45.27	8	PVC	2100	0000	2	1	Water level - sag in pipe - 10% - @ 40 ft.
COL-PWS-7010110	4/1/2019	10:02:58 AM	D	115.67	8	PVC	2100	0000	2	1	Water level - sag in pipe - 5% - @ 60 ft.
COL-PWS-7010152	4/1/2019	9:51:07 AM	D	100.22	8	PVC	2100	0000	2	1	Water level - sag in pipe - 10% - @ 22 ft.
COL-PWS-7010171	4/1/2019	9:35:34 AM	U	54.76	8	PVC	2100	0000	2	1	Water level - sag in pipe - 10% - @ 38 ft.
COL-PWS-7010369	4/1/2019	8:29:09 AM	U	154.49	8	PVC	2200	0000	2	1	Water level - sag in pipe - 5% - @ 66 ft. Water level - sag in pipe - 5% - @ 132 ft.
COL-PWS-7018017	4/1/2019	3:05:03 PM	D	163.09	8	PVC	2100	0000	2	1	Water level - sag in pipe - 20% - between 116 ft. - 146 ft.
COL-PWS-3002307	4/1/2019	12:34:33 PM	D	63.77	8	VCP	0000	3100	1	3	Deposits settled other - 15% - @ 14 ft.
COL-PWS-3002307	4/1/2019	12:41:12 PM	U	86.20	8	VCP	0000	3100	1	3	Deposits settled other - 20% - @ 83 ft.
COL-PWS-1007952	4/1/2019	10:09:32 AM	D	41.53	18	VCP	0000	5100	1	5	Deposits settled other - 45% - @ 40 ft.
COL-PWS-1008372	4/1/2019	11:25:02 AM	D	244.28	30	VCP	0000	0000	1	1	
COL-PWS-7010240	4/1/2019	9:04:46 AM	U	152.63	8	PVC	0000	0000	1	1	
COL-PWS-3001153	4/2/2019	9:53:34 AM	D	74.50	8	VCP	0000	4238	1	4	Medium roots throughout line
COL-PWS-3000394	4/2/2019	6:57:54 AM	D	326.06	8	VCP	3100	3200	3	3	Fracture @ 8 ft. Medium roots @ 93 ft. & 99 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-3001072	4/2/2019	11:06:57 AM	D	200.96	8	VCP	3100	3400	3	3	Fracture @ 105 ft. Medium roots @ 105 ft., 168 ft., 185 ft. & 195 ft.
COL-PWS-3000881	4/2/2019	9:14:53 AM	D	282.18	8	VCP	4133	3200	4	3	Fracture @ 9 ft., 88 ft, 150 ft. & 277 ft. Medium roots @ 150 ft. & 220 ft.
COL-PWS-3001699	4/2/2019	11:36:37 AM	D	226.61	8	VCP	5100	413C	5	4	Broken pipe @ 103 ft. Roots @ 64 ft., 69 ft., 74 ft., 79 ft., 103 ft., 108 ft. & 152 ft.
COL-PWS-3000707	4/2/2019	8:24:40 AM	D	86.88	8	VCP	0000	4136	1	4	Medium roots throughout line
COL-PWS-3020283	4/2/2019	12:56:15 PM	U	160.59	8	VCP	0000	3422	1	3	Obstacles other - 10% - @ 8 ft. Medium roots @ 100 ft., 105 ft., 116 ft., 121 ft. & 126 ft. Deposits settled other - 10 % - @ 160 ft.
COL-PWS-3000155	4/2/2019	7:32:56 AM	U	174.44	8	VCP	0000	3100	1	3	Medium roots @ 46 ft.
COL-PWS-3000380	4/2/2019	7:10:25 AM	U	282.09	8	VCP	0000	4131	1	4	Obstacles other - 25% - @ 86 ft. Medium roots @ 162 ft.
COL-PWS-3000563	4/2/2019	7:49:43 AM	D	315.92	8	VCP	0000	4137	1	4	Roots throughout line.
COL-PWS-3000829	4/2/2019	8:57:12 AM	U	263.66	8	VCP	0000	3500	1	3	Medium roots @ 77 ft., 113 ft., 116 ft., 159 ft. & 220 ft.
COL-PWS-3001103	4/2/2019	9:32:48 AM	D	213.64	8	VCP	0000	3100	1	3	Medium roots @ 206 ft.
COL-PWS-3001987	4/2/2019	12:30:06 PM	U	151.72	8	VCP	0000	5112	1	5	Root ball - 90% - @ 151 ft. Fine roots @ 94 ft. & 99 ft.
COL-PWS-3002476	4/2/2019	1:40:41 PM	D	264.63	8	VCP	0000	3514	1	3	Roots throughout line.
COL-PWS-2016346	4/2/2019	1:21:35 PM	D	358.24	8	PVC	0000	0000	1	1	
COL-PWS-2016557	4/2/2019	12:48:39 PM	U	270.71	8	PVC	0000	0000	1	1	
COL-PWS-2016686	4/2/2019	11:29:38 AM	D	351.02	8	PVC	0000	0000	1	1	
COL-PWS-2016704	4/2/2019	12:17:00 PM	U	147.09	8	PVC	0000	0000	1	1	
COL-PWS-2016778	4/2/2019	7:52:13 AM	U	202.63	8	VCP	0000	0000	1	1	
COL-PWS-3001935	4/2/2019	12:10:48 PM	U	65.52	8	VCP	0000	0000	1	1	
COL-PWS-3002207	4/2/2019	1:14:08 PM	D	114.57	8	VCP	0000	0000	1	1	
COL-PWS-3002457	4/2/2019	1:26:10 PM	U	27.01	8	VCP	0000	0000	1	1	
COL-PWS-5010274	4/2/2019	3:14:58 PM	D	362.75	8	PVC	0000	0000	1	1	
COL-PWS-5010370	4/2/2019	2:28:41 PM	D	298.61	8	PVC	0000	0000	1	1	
COL-PWS-5010400	4/2/2019	1:39:24 PM	D	315.23	8	PVC	0000	0000	1	1	
COL-PWS-5010466	4/2/2019	3:38:50 PM	D	380.25	8	VCP	0000	0000	1	1	
COL-PWS-5010632	4/2/2019	1:28:35 PM	D	320.90	8	VCP	0000	0000	1	1	
COL-PWS-7009869	4/2/2019	9:33:25 AM	D	25.32	8	VCP	0000	0000	1	1	
COL-PWS-7009967	4/2/2019	8:59:29 AM	D	288.73	8	VCP	0000	0000	1	1	
COL-PWS-7010041	4/2/2019	8:33:44 AM	D	208.07	8	VCP	0000	0000	1	1	
COL-PWS-7010050	4/2/2019	8:07:23 AM	U	135.52	8	VCP	0000	0000	1	1	
COL-PWS-7010073	4/2/2019	10:28:36 AM	U	112.44	8	VCP	0000	0000	1	1	
COL-PWS-7010078	4/2/2019	9:57:52 AM	D	84.48	8	VCP	0000	0000	1	1	
COL-PWS-5010317	4/2/2019	2:14:57 PM	D	151.95	8	PVC	2200	0000	2	1	Water level - sag in pipe - 5% - @ 50 ft. Water level - sag in pipe - 20% - between 62 ft. - 101 ft.
COL-PWS-5010361	4/2/2019	12:53:12 PM	D	348.28	8	VCP	2111	0000	2	1	Medium offset @ 8 ft. Water level - sag in pipe - 5% - @ 306 ft.
COL-PWS-5010362	4/2/2019	1:11:12 PM	D	330.58	8	VCP	2400	0000	2	1	Water level - sag in pipe - 10% - between 64 ft. - 83 ft. Water level - sag in pipe - 5% - between 190 ft. - 211 ft. Water level - sag in pipe - 10% - between 235 ft. - 324 ft.
COL-PWS-5010483	4/2/2019	2:55:30 PM	D	227.72	8	PVC	2100	0000	2	1	Water level - sag in pipe - 10% - between 167 ft. - 205 ft.
COL-PWS-3001699	4/2/2019	11:57:12 AM	D	343.61	8	VCP	0000	3D00	1	3	Medium roots throughout line
COL-PWS-3000707	4/2/2019	8:36:19 AM	U	142.46	8	VCP	0000	4100	1	4	Root ball - 80% - @ 142 ft.
COL-PWS-3001153	4/2/2019	10:09:54 AM	U	299.25	8	VCP	0000	3500	1	3	Medium roots @ 132 ft., 141 ft., 151 ft., 157 ft. & 232 ft.
COL-PWS-2016809	4/2/2019	7:30:07 AM	D	48.53	8	VCP	0000	0000	1	1	
COL-PWS-3020283	4/2/2019	12:50:30 PM	D	57.82	8	VCP	0000	2100	1	2	Deposits settled compacted - 10% - @ 33 ft.
COL-PWS-7010357	4/2/2019	11:21:08 AM	D	137.96	8	VCP	2100	0000	2	1	Water level - sag in pipe - 15% - between 82 ft. - 137 ft.
COL-PWS-3001551	4/3/2019	10:18:29 AM	U	307.44	8	VCP	3921	3C12	3	3	Fractures throughout line. Roots@ 38 ft., 44 ft., 50 ft., 103 ft. & 143 ft.
COL-PWS-3001477	4/3/2019	10:07:01 AM	U	122.08	8	VCP	3A21	0000	3	1	Fractures throughout line.
COL-PWS-3001697	4/3/2019	11:53:38 AM	D	77.71	8	VCP	4134	3100	4	3	Fractures @ 19 ft., 29 ft., 31 ft., 74 ft., & 77 ft. Deposits settled fine - 15% - @ 77 ft.
COL-PWS-3001519	4/3/2019	11:00:31 AM	U	266.00	8	VCP	423B	0000	4	1	Fractures throughout line.
COL-PWS-3001720	4/3/2019	12:27:44 PM	D	280.14	8	VCP	453C	3800	4	3	Fractures & roots throughout line.
COL-PWS-3001698	4/3/2019	12:06:40 PM	U	232.36	8	VCP	5142	0000	5	1	Broken pipe @ 97 ft. Fractures throughout line.
COL-PWS-3002285	4/3/2019	8:34:38 AM	U	280.72	8	VCP	0000	3100	1	3	Medium roots in lateral - 25% - 10 o'clock - @ 75 ft.
COL-PWS-7002831	4/3/2019	12:20:08 PM	D	342.41	27	VCP	0000	3100	1	3	Medium roots in lateral - 15% - 2 to 3 o'clock - @ 17 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-7002847	4/3/2019	11:51:53 AM	D	68.06	27	VCP	0000	3100	1	3	Medium roots in connection - 25% - 2 to 5 o'clock - @ 52 ft.
COL-PWS-3001160	4/3/2019	2:11:39 PM	U	337.18	8	VCP	1100	0000	1	1	
COL-PWS-3001373	4/3/2019	1:59:15 PM	D	185.36	8	VCP	0000	0000	1	1	Medium offset joint @ 191 ft.
COL-PWS-3002425	4/3/2019	9:11:29 AM	D	331.91	8	VCP	0000	0000	1	1	
COL-PWS-3002434	4/3/2019	8:52:17 AM	D	188.38	8	VCP	0000	0000	1	1	
COL-PWS-3002477	4/3/2019	8:28:43 AM	U	112.13	8	VCP	0000	0000	1	1	
COL-PWS-3002548	4/3/2019	7:35:07 AM	U	115.55	8	VCP	0000	1100	1	1	Vermin Cockroach @ 0 ft,
COL-PWS-7001044	4/3/2019	7:51:37 AM	D	274.08	8	RPM	0000	0000	1	1	
COL-PWS-7001200	4/3/2019	8:04:42 AM	D	264.06	8	RPM	0000	0000	1	1	
COL-PWS-7001243	4/3/2019	9:07:05 AM	D	132.04	8	RPM	0000	0000	1	1	
COL-PWS-7001353	4/3/2019	8:38:08 AM	D	250.13	8	RPM	0000	0000	1	1	
COL-PWS-7001382	4/3/2019	8:30:16 AM	U	62.05	8	RPM	0000	0000	1	1	
COL-PWS-7001462	4/3/2019	8:47:42 AM	D	249.68	8	RPM	0000	0000	1	1	
COL-PWS-7001941	4/3/2019	9:37:24 AM	D	290.07	8	VCP	0000	0000	1	1	
COL-PWS-7001970	4/3/2019	9:28:36 AM	U	110.21	8	VCP	0000	0000	1	1	
COL-PWS-7002841	4/3/2019	12:07:41 PM	D	301.15	27	VCP	0000	0000	1	1	
COL-PWS-7002842	4/3/2019	12:05:33 PM	D	30.52	27	VCP	0000	0000	1	1	
COL-PWS-7002846	4/3/2019	11:57:54 AM	D	300.29	27	VCP	0000	0000	1	1	
COL-PWS-7002910	4/3/2019	10:42:16 AM	D	88.05	27	VCP	0000	0000	1	1	
COL-PWS-7002941	4/3/2019	10:50:53 AM	D	263.12	27	VCP	0000	0000	1	1	
COL-PWS-7003065	4/3/2019	10:57:48 AM	D	372.13	27	VCP	0000	0000	1	1	
COL-PWS-7003461	4/3/2019	11:19:53 AM	D	128.30	27	VCP	0000	0000	1	1	
COL-PWS-7020254	4/3/2019	12:15:07 PM	D	28.71	27	VCP	0000	0000	1	1	
COL-PWS-7021543	4/3/2019	11:07:58 AM	D	509.05	27	VCP	0000	0000	1	1	
COL-PWS-3001519	4/3/2019	10:57:39 AM	D	129.88	8	VCP	3721	2100	3	2	Fractures throughout line. Obstacles other - 5% - @ 87 ft.
COL-PWS-3001697	4/3/2019	12:05:55 PM	D	317.09	8	VCP	3900	0000	3	1	Fractures throughout line.
COL-PWS-4014664	4/3/2019	8:04:00 AM	U	245.81	12	VCP	0000	0000	1	1	
COL-PWS-4014977	4/3/2019	8:04:00 AM	D	259.88	8	PVC	0000	0000	1	1	
COL-PWS-7001978	4/3/2019	9:54:39 AM	D	182.15	8	RPM	0000	0000	1	1	
COL-PWS-2004196	4/4/2019	9:46:10 AM	U	257.42	8	VCP	0000	3D00	1	3	Roots @ 75 ft., 126 ft., 129 ft., 137 ft., 142 ft., & 257 ft.
COL-PWS-2020234	4/4/2019	11:18:06 AM	D	17.55	8	VCP	3100	3300	3	3	Medium roots @ 5 ft., 10 ft. & 16 ft. Fracture @ 17 ft.
COL-PWS-3003744	4/4/2019	11:04:51 AM	U	27.98	8	VCP	0000	4500	1	4	Camera underwater between 1 ft - 27 ft.
COL-PWS-3003551	4/4/2019	8:24:00 AM	D	75.67	8	VCP	0000	4133	1	4	Roots @ 37 ft., 55 ft., 61 ft., 63 ft. & 73 ft.
COL-PWS-2004206	4/4/2019	10:03:05 AM	D	280.62	8	VCP	0000	3100	1	3	Medium roots @ 2 ft.
COL-PWS-2004518	4/4/2019	1:59:56 PM	D	31.49	8	VCP	0000	3300	1	3	Medium roots @ 21 ft., 24 ft. & 28 ft.
COL-PWS-2020199	4/4/2019	1:37:33 PM	D	41.93	8	VCP	0000	3100	1	3	Medium roots @ 41 ft.
COL-PWS-3003479	4/4/2019	8:12:12 AM	D	217.34	8	VCP	0000	4136	1	4	Roots @ 28 ft., 31 ft., 36 ft., 39 ft., 61 ft., 155 ft. & 156 ft.
COL-PWS-3003664	4/4/2019	9:20:36 AM	D	230.02	8	VCP	0000	3321	1	3	Roots @ 29 ft., 38 ft., & 40 ft. Obstacles other - 10% - @ 29 ft.
COL-PWS-3000791	4/4/2019	11:35:54 AM	U	351.12	8	VCP	1100	0000	1	1	Medium offset joint @ 79 ft.
COL-PWS-3000994	4/4/2019	12:42:10 PM	D	399.19	8	VCP	1100	0000	1	1	Medium offset joint @ 28 ft.
COL-PWS-3003834	4/4/2019	11:08:48 AM	D	220.95	8	VCP	0000	0000	1	1	
COL-PWS-5010532	4/4/2019	3:02:53 PM	U	123.20	8	VCP	0000	0000	1	1	
COL-PWS-5010569	4/4/2019	4:02:00 PM	U	99.93	8	VCP	0000	0000	1	1	
COL-PWS-5010578	4/4/2019	3:13:09 PM	D	312.10	8	VCP	0000	0000	1	1	
COL-PWS-5010608	4/4/2019	3:49:59 PM	D	287.37	8	VCP	0000	0000	1	1	
COL-PWS-5010674	4/4/2019	3:27:17 PM	U	222.74	8	VCP	0000	0000	1	1	
COL-PWS-3003551	4/4/2019	8:42:52 AM	U	38.81	8	VCP	0000	2100	1	2	Obstacles other - 10% - @ 38 ft.
COL-PWS-7001892	4/5/2019	11:55:39 AM	D	9.46	24	VCP	0000	4100	1	4	Alignment down - 30% - @ 9 ft.
COL-PWS-2016237	4/5/2019	10:05:53 AM	D	405.14	8	VCP	0000	2M00	1	2	Deposits attached grease - 10% - between 99 ft. - 405 ft.
COL-PWS-7001888	4/5/2019	11:16:20 AM	D	9.57	18	VCP	0000	5100	1	5	Deposits attached grease - 85% - @ 0 ft.
COL-PWS-7001794	4/5/2019	8:17:45 AM	U	168.98	8	VCP	0000	4A00	1	4	Camera underwater between 81 ft. - 135 ft.
COL-PWS-7001510	4/5/2019	11:23:01 AM	U	347.34	24	VCP	0000	3100	1	3	Deposits settled other - 15% - @ 347 ft.
COL-PWS-2016790	4/5/2019	10:42:53 AM	U	310.85	8	PVC	0000	4100	1	4	Deposits settled other - 30% - @ 110 ft.
COL-PWS-7001766	4/5/2019	8:53:11 AM	D	70.14	10	VCP	0000	3100	1	3	Deposits attached raqqing - 15% - @ 63 ft.
COL-PWS-7003464	4/5/2019	10:32:15 AM	D	11.90	42	VCP	0000	3100	1	3	Deposits settled other - 20% - @ 6 ft.
COL-PWS-2016021	4/5/2019	1:35:06 PM	D	353.75	8	VCP	0000	0000	1	1	
COL-PWS-2016310	4/5/2019	8:02:29 AM	U	131.44	8	PVC	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-2016383	4/5/2019	12:59:27 PM	D	215.49	8	VCP	1100	0000	1	1	Medium offset joint @ 2 ft.
COL-PWS-2016436	4/5/2019	10:22:17 AM	U	299.74	8	PVC	0000	0000	1	1	
COL-PWS-2016555	4/5/2019	12:51:33 PM	D	240.94	8	VCP	0000	0000	1	1	
COL-PWS-2016638	4/5/2019	10:43:51 AM	D	292.81	8	PVC	0000	0000	1	1	
COL-PWS-2016747	4/5/2019	12:40:26 PM	D	289.59	8	VCP	0000	0000	1	1	
COL-PWS-2016934	4/5/2019	12:30:05 PM	D	261.90	8	PVC	0000	0000	1	1	
COL-PWS-6000150	4/5/2019	10:01:48 AM	D	94.85	8	VCP	0000	0000	1	1	
COL-PWS-6000286	4/5/2019	10:15:11 AM	D	150.19	8	VCP	0000	0000	1	1	
COL-PWS-6017854	4/5/2019	9:39:01 AM	D	412.28	8	VCP	0000	0000	1	1	
COL-PWS-7001174	4/5/2019	1:17:53 PM	U	446.60	24	VCP	0000	0000	1	1	
COL-PWS-7001506	4/5/2019	12:12:47 PM	U	451.17	18	VCP	0000	0000	1	1	
COL-PWS-7001774	4/5/2019	8:01:20 AM	U	66.17	8	VCP	0000	0000	1	1	
COL-PWS-7001792	4/5/2019	11:08:16 AM	D	191.22	18	VCP	0000	0000	1	1	
COL-PWS-7001793	4/5/2019	11:49:06 AM	D	188.30	24	VCP	0000	0000	1	1	
COL-PWS-7003460	4/5/2019	9:39:13 AM	D	346.50	27	VCP	0000	0000	1	1	
COL-PWS-7001510	4/5/2019	1:10:38 PM	D	97.14	24	VCP	0000	3100	1	3	Deposits attached other - 20% - @ 97 ft.
COL-PWS-7001169	4/5/2019	12:28:27 PM	U	449.39	18	VCP	0000	0000	1	1	
COL-PWS-1008134	4/8/2019	1:59:23 PM	D	273.22	18	VCP	4232	3100	4	3	Cracks @ 18 ft., 110 ft., & 142 ft. Fractures @ 76 ft., 193 ft., 197 ft. & 232 ft. Deposits settled other - 15% - @ 235 ft.
COL-PWS-5020754	4/8/2019	12:40:15 PM	D	333.32	8	VCP	4931	1100	4	1	Factures & cracks throughout line. Fine roots @ 50 ft.
COL-PWS-1008297	4/8/2019	12:43:00 PM	D	243.18	10	VCP	0000	4234	1	4	Deposits attached grease - 30% - between 202 ft. - 212 ft. Deposits attached grease - 20% - between 223 ft. - 243 ft.
COL-PWS-1008515	4/8/2019	10:58:54 AM	D	8.51	6	VCP	0000	4100	1	4	Deposits attached grease - 25% - @ 5 ft.
COL-PWS-1008614	4/8/2019	11:20:40 AM	D	359.59	18	VCP	0000	3100	1	3	Deposits settled other - 15% - @ 308 ft.
COL-PWS-1009036	4/8/2019	8:19:36 AM	U	63.08	8	VCP	0000	4131	1	4	Obstacles pipe material - 15% - @ 24 ft. Obstacles other - 30% - @ 62 ft.
COL-PWS-1009023	4/8/2019	9:29:40 AM	D	366.29	8	VCP	0000	4100	1	4	Deposits settled other - 25% - @ 316 t.
COL-PWS-1009024	4/8/2019	9:20:57 AM	D	54.16	8	VCP	0000	3100	1	3	Deposits settled gravel - 15% - @ 5 ft.
0	4/8/2019	7:21:23 AM	U	93.93	6	PVC	0000	0000	1	1	
COL-PWS-1008186	4/8/2019	1:43:05 PM	D	178.18	18	VCP	0000	0000	1	1	
COL-PWS-1008197	4/8/2019	1:35:42 PM	D	137.08	18	VCP	0000	0000	1	1	
COL-PWS-1008301	4/8/2019	12:28:49 PM	U	139.53	10	VCP	0000	0000	1	1	
COL-PWS-1008488	4/8/2019	11:48:15 AM	D	15.13	18	VCP	0000	0000	1	1	
COL-PWS-1008534	4/8/2019	11:36:56 AM	D	349.14	18	VCP	0000	0000	1	1	
COL-PWS-1008708	4/8/2019	10:06:24 AM	D	153.06	8	VCP	0000	0000	1	1	
COL-PWS-1008756	4/8/2019	10:28:00 AM	U	158.42	8	VCP	0000	0000	1	1	
COL-PWS-1008760	4/8/2019	10:35:03 AM	U	13.19	8	VCP	0000	0000	1	1	
COL-PWS-1008765	4/8/2019	10:38:13 AM	U	60.04	8	PVC	0000	0000	1	1	
COL-PWS-1009034	4/8/2019	9:04:31 AM	U	389.32	8	VCP	0000	2100	1	2	Obstacles pipe material - 10% - @ 57 ft.
COL-PWS-5010420	4/8/2019	7:38:20 AM	D	207.87	8	PVC	0000	0000	1	1	
COL-PWS-5010459	4/8/2019	9:36:36 AM	D	153.90	8	PVC	0000	0000	1	1	
COL-PWS-5010478	4/8/2019	9:31:00 AM	D	71.28	8	PVC	0000	0000	1	1	
COL-PWS-5010545	4/8/2019	9:01:48 AM	D	224.50	8	PVC	0000	0000	1	1	
COL-PWS-5011939	4/8/2019	2:00:19 PM	D	413.01	8	PVC	0000	0000	1	1	
COL-PWS-5012067	4/8/2019	2:19:05 PM	D	305.45	8	PVC	0000	0000	1	1	
COL-PWS-5012074	4/8/2019	2:43:56 PM	D	411.35	8	PVC	0000	0000	1	1	
COL-PWS-5012197	4/8/2019	3:15:04 PM	D	277.10	8	PVC	0000	0000	1	1	
COL-PWS-1008147	4/8/2019	1:52:54 PM	D	86.17	18	VCP	2100	0000	2	1	Crack @ 6 ft.
COL-PWS-1008252	4/8/2019	7:33:06 AM	D	344.95	8	VCP	2100	0000	2	1	Fracture @ 150 ft.
COL-PWS-1008485	4/8/2019	11:50:22 AM	D	85.88	18	VCP	2100	0000	2	1	Crack @ 5 ft.
COL-PWS-5010715	4/8/2019	8:41:22 AM	D	271.33	8	VCP	2100	0000	2	1	Water level - sag in pipe - 10% - between 158 ft. - 167 ft.
COL-PWS-5010770	4/8/2019	9:50:52 AM	D	352.68	8	VCP	2100	0000	2	1	Water level - sag in pipe - 15% - between 336 ft. - 348 ft.
COL-PWS-5010790	4/8/2019	8:11:57 AM	D	267.03	8	VCP	2200	0000	2	1	Water level - sag in pipe - 5% - @ 117 ft. Water level - sag in pipe - 5% - @ 259 ft.
COL-PWS-5011342	4/8/2019	12:14:28 PM	D	351.21	8	VCP	2100	0000	2	1	Water level - sag in pipe - 15% - @ 196 ft.
COL-PWS-5011510	4/8/2019	12:26:38 PM	D	352.19	8	VCP	2100	0000	2	1	Water level - sag in pipe - 15% - @ 228 ft.
COL-PWS-1009036	4/8/2019	8:50:53 AM	D	128.62	8	VCP	0000	4131	1	4	Deposits settled other - 20% - @ 12 ft. Obstacles construction debris - 25% - @ 128 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-1009041	4/8/2019	8:32:33 AM	D	242.00	8	VCP	0000	0000	1	1	
COL-PWS-1008331	4/8/2019	12:38:10 PM	U	2.16	10	VCP	2100	0000	2	1	Large offset joint @ 2 ft.
COL-PWS-2004366	4/9/2019	7:29:07 AM	U	366.12	8	VCP	3700	4331	3	4	Roots @ 6 ft. Camera underwater between 108 ft. - 122 ft. Water level - sag in pipe - 50% - between 92 ft. - 128 ft.
COL-PWS-2004514	4/9/2019	8:03:15 AM	D	28.04	8	VCP	0000	3100	1	3	Deposits settled other - 20% - @ 11 ft.
COL-PWS-2021661	4/9/2019	10:34:13 AM	D	331.85	8	VCP	0000	4331	1	4	Deposits attached encrustation - 10% - between 5 ft. - 316 ft. Deposits attached grease - 20% - @ 310 ft. Camera underwater - between 316 ft. - 331 ft.
COL-PWS-4012499	4/9/2019	12:26:46 PM	U	350.16	8	VCP	0000	3100	1	3	Deposits settled fine - 20% - @ 231 ft.
COL-PWS-4016083	4/9/2019	11:21:58 AM	D	162.23	8	VCP	0000	3100	1	3	Roots @ 100 ft.
COL-PWS-2015416	4/9/2019	10:05:27 AM	D	351.82	8	VCP	0000	0000	1	1	
COL-PWS-2015658	4/9/2019	8:33:57 AM	D	252.86	8	VCP	0000	0000	1	1	
COL-PWS-2015659	4/9/2019	8:11:50 AM	D	253.26	8	VCP	0000	0000	1	1	
COL-PWS-2015660	4/9/2019	7:31:05 AM	U	84.72	8	VCP	0000	1100	1	1	Vermin cockroach @ 84 ft.
COL-PWS-2015661	4/9/2019	7:39:53 AM	U	147.09	8	VCP	0000	0000	1	1	
COL-PWS-2015662	4/9/2019	9:52:28 AM	D	332.57	8	VCP	0000	0000	1	1	
COL-PWS-2021660	4/9/2019	10:21:06 AM	D	338.10	8	VCP	0000	0000	1	1	
COL-PWS-4016185	4/9/2019	11:30:18 AM	D	88.84	8	VCP	0000	0000	1	1	
COL-PWS-4016226	4/9/2019	11:39:36 AM	D	2.38	8	VCP	0000	0000	1	1	
COL-PWS-4017789	4/9/2019	10:04:57 AM	D	349.11	8	VCP	0000	0000	1	1	
COL-PWS-4012631	4/9/2019	12:11:37 PM	U	219.00	8	VCP	2B00	4800	2	4	Water level - sag in pipe - 25% - between 95 ft. - 178 ft. Camera underwater - between 120 ft. - 161 ft.
COL-PWS-2004198	4/9/2019	7:48:04 AM	U	361.12	8	VCP	2100	3200	2	3	Fracture @ 112 ft. Medium roots @ 86 ft. & 112 ft.
COL-PWS-2004528	4/9/2019	8:21:16 AM	D	305.34	8	VCP	2111	0000	2	1	Crack @ 140 ft. Water level - sag in pipe - 15% - @ 238 ft.
COL-PWS-2002541	4/9/2019	9:11:30 AM	D	76.95	21	VCP	0000	0000	1	1	
COL-PWS-2011521	4/10/2019	9:31:23 AM	D	350.13	24	VCP	4100	3500	4	3	Fracture @ 43 ft. Medium roots between 170 ft. - 188 ft. Roots @ 305 ft.
COL-PWS-7000459	4/10/2019	9:30:29 AM	D	216.07	8	VCP	5100	4700	5	4	Hole void visible - @ 144 ft. Camera underwater - between 180 ft. - 216 ft.
COL-PWS-2004130	4/10/2019	7:49:29 AM	D	351.00	8	VCP	5131	0000	5	1	Broken pipe @ 243 ft. Fracture @ 242 ft.
COL-PWS-2014127	4/10/2019	7:33:23 AM	U	5.35	8	VCP	5100	0000	5	1	Hole soil visible - @ 4 ft.
COL-PWS-6000118	4/10/2019	1:35:47 PM	U	377.59	8	VCP	0000	3100	1	3	Deposits attached grease - 20% - between 372 ft. - 377 ft.
COL-PWS-7000482	4/10/2019	9:46:55 AM	D	80.11	8	VCP	0000	4200	1	4	Camera underwater - between 48 ft. - 57 ft.
COL-PWS-2013158	4/10/2019	1:02:47 PM	D	76.92	30	VCP	0000	4100	1	4	Deposits settled other - 25% - @ 52 ft.
COL-PWS-2004128	4/10/2019	7:37:59 AM	D	350.46	8	VCP	0000	3100	1	3	Deposits settled fine - 20% - @ 37 ft.
COL-PWS-2012746	4/10/2019	11:38:24 AM	D	499.11	18	VCP	0000	4100	1	4	Deposits settled other - 25% - @ 198 ft.
COL-PWS-5017454	4/10/2019	1:08:47 PM	D	33.29	8	VCP	0000	3400	1	3	Deposits attached encrustation - 15% - between 12 ft. - 33 ft.
COL-PWS-2014199	4/10/2019	7:26:03 AM	U	74.98	8	VCP	0000	3100	1	3	Medium roots @ 73 ft.
COL-PWS-2012932	4/10/2019	12:46:42 PM	D	328.37	30	VCP	0000	0000	1	1	
COL-PWS-2004133	4/10/2019	8:03:13 AM	D	326.05	8	VCP	0000	0000	1	1	
COL-PWS-2011723	4/10/2019	9:48:05 AM	D	53.21	24	VCP	0000	0000	1	1	
COL-PWS-2012749	4/10/2019	11:59:02 AM	D	477.02	18	VCP	0000	0000	1	1	
COL-PWS-5000008	4/10/2019	12:10:01 PM	D	308.71	8	VCP	0000	0000	1	1	
COL-PWS-5000209	4/10/2019	11:51:15 AM	U	306.60	8	VCP	0000	0000	1	1	
COL-PWS-5017301	4/10/2019	12:42:28 PM	D	352.52	8	VCP	0000	0000	1	1	
COL-PWS-60017843	4/10/2019	2:19:14 PM	D	48.73	8	VCP	0000	0000	1	1	
COL-PWS-6017580	4/10/2019	1:53:36 PM	U	343.30	8	VCP	0000	0000	1	1	
COL-PWS-7000377	4/10/2019	7:35:30 AM	U	313.02	8	VCP	1100	0000	1	1	Medium offset joint @ 201 ft.
COL-PWS-7000399	4/10/2019	8:13:43 AM	D	241.23	8	VCP	0000	0000	1	1	
COL-PWS-7000431	4/10/2019	8:26:26 AM	D	202.73	8	VCP	0000	0000	1	1	
COL-PWS-7000453	4/10/2019	8:39:44 AM	D	210.05	8	VCP	0000	0000	1	1	
COL-PWS-7001312	4/10/2019	10:25:04 AM	D	216.07	8	VCP	0000	0000	1	1	
COL-PWS-7001589	4/10/2019	10:52:38 AM	D	300.39	8	VCP	0000	0000	1	1	
COL-PWS-7001169	4/10/2019	10:38:20 AM	D	216.57	8	VCP	2100	0000	2	1	Crack @ 185 ft.
COL-PWS-2012367	4/10/2019	11:01:10 AM	D	501.11	24	VCP	2100	0000	2	1	Crack @ 278 ft.
COL-PWS-7000459	4/10/2019	9:21:22 AM	D	133.75	8	VCP	0000	0000	1	1	
COL-PWS-2011012	4/10/2019	8:56:03 AM	D	425.38	15	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-2011245	4/10/2019	9:14:02 AM	D	520.03	24	VCP	0000	0000	1	1	
COL-PWS-5012385	4/11/2019	9:49:56 AM	D	299.59	8	VCP	4336	0000	4	1	Cracks & fractures throughout line.
COL-PWS-5012480	4/11/2019	9:00:22 AM	U	303.79	8	VCP	4538	3112	4	3	Cracks & fractures throughout line. Roots @ 143 ft., 172 ft. & 240 ft.
COL-PWS-5012554	4/11/2019	10:45:49 AM	D	383.09	8	VCP	4B3B	2112	4	2	Cracks & fractures throughout line. Roots @ 102 ft.
COL-PWS-5012289	4/11/2019	11:31:30 AM	D	290.89	10	VCP	4223	0000	4	1	Fracture @ 179 ft. Crack @ 280 ft. Water level - sag in pipe - 10% - @ 194 ft. Water level - sag in pipe - 5% - @ 273 ft.
COL-PWS-5012469	4/11/2019	2:11:19 PM	D	303.79	8	VCP	5143	2100	5	2	Broken pipe @ 5 ft. Cracks @ 11 ft., 18 ft. & 25 ft. Fracture @ 8 ft., 32 ft., 36 ft., & 300 ft. Tap break-in - 10 o'clock - @ 49 ft.
COL-PWS-5012603	4/11/2019	2:30:32 PM	D	157.91	8	VCP	4131	0000	4	1	Fractures @ 6 ft., 16 ft. & 153 ft.
COL-PWS-5012574	4/11/2019	2:41:17 PM	D	146.37	8	VCP	4131	0000	4	1	Fractures @ 4 ft., 12 ft. & 141 ft. Crack @ 8 ft.
COL-PWS-5012615	4/11/2019	10:22:54 AM	U	228.31	8	VCP	4132	0000	4	1	Fractures @ 92 ft., 158 ft. Cracks & 198 ft. & 218 ft.
COL-PWS-5017598	4/11/2019	7:35:28 AM	D	283.84	24	VCP	0000	4200	1	4	Camera underwater between 215 ft. - 220 ft. & between 279 ft. - 283 ft.
COL-PWS-6016817	4/11/2019	11:04:16 AM	U	130.44	15	VCP	0000	4D00	1	4	Camera underwater between 5 ft. - 130 ft.
COL-PWS-6016614	4/11/2019	12:32:24 PM	D	279.43	12	VCP	0000	4C00	1	4	Camera underwater between 7 ft. - 118 ft.
COL-PWS-6017080	4/11/2019	1:35:55 PM	D	301.89	21	VCP	0000	3111	1	3	Roots @ 152 ft. & 186 ft.
COL-PWS-2017225	4/11/2019	1:49:50 PM	D	298.88	21	VCP	0000	0000	1	1	
COL-PWS-5011161	4/11/2019	3:30:55 PM	U	83.99	8	PVC	0000	0000	1	1	
COL-PWS-5011676	4/11/2019	8:04:30 AM	D	308.88	8	VCP	0000	0000	1	1	
COL-PWS-5011828	4/11/2019	8:21:36 AM	D	353.07	8	VCP	0000	0000	1	1	
COL-PWS-5012778	4/11/2019	1:39:23 PM	D	315.72	12	VCP	0000	0000	1	1	
COL-PWS-5012861	4/11/2019	1:06:41 PM	D	368.42	12	VCP	0000	0000	1	1	
COL-PWS-5017905	4/11/2019	9:27:01 AM	D	70.48	24	VCP	0000	0000	1	1	
COL-PWS-6017002	4/11/2019	12:51:39 PM	D	248.55	21	VCP	0000	0000	1	1	
COL-PWS-6017016	4/11/2019	11:30:14 AM	D	300.89	15	VCP	0000	0000	1	1	
COL-PWS-6017238	4/11/2019	11:45:38 AM	D	101.06	15	VCP	2200	5132	2	5	Obstacles in joint - 40% - @ 101 ft. Deposits attached encrustation - 15% - @ 2 ft. Tap break-in - 2 o'clock @ 6 ft. Cracks @ 33ft., 39 ft., 47 ft. & 54 ft.
COL-PWS-5011252	4/11/2019	3:22:09 PM	U	134.05	8	PVC	2100	0000	2	1	Water level - 5% - @ 128 ft.
COL-PWS-5012419	4/11/2019	12:29:58 PM	D	258.62	10	VCP	2100	0000	2	1	Fracture @ 124 ft.
COL-PWS-6016627	4/11/2019	10:12:26 AM	D	218.57	15	VCP	2100	2100	2	2	Deposits attached grease - 10% - @ 176 ft. Crack @ 211 ft.
COL-PWS-5017598	4/11/2019	8:43:14 AM	U	17.25	24	VCP	0000	4200	1	4	Camera underwater between 6 ft. - 17 ft.
COL-PWS-5012540	4/11/2019	12:40:54 PM	D	8.02	10	VCP	0000	0000	1	1	
COL-PWS-6016817	4/11/2019	10:35:12 AM	D	243.54	15	VCP	0000	0000	1	1	
COL-PWS-5012428	4/12/2019	3:20:38 PM	D	50.55	8	VCP	3111	0000	3	1	Medium offset joint @ 5 ft. Cracks @ 17 ft.
COL-PWS-1008034	4/12/2019	9:58:46 AM	D	336.51	18	VCP	4132	3100	4	3	Deposits settled other - 15% - @ 42 ft.
COL-PWS-1008012	4/12/2019	10:14:24 AM	D	356.53	18	VCP	4200	0000	4	1	Fractures @ 44 ft. & 48 ft.
COL-PWS-1017979	4/12/2019	9:21:38 AM	U	127.36	8	VCP	4132	0000	4	1	Cracks @ 71 ft., 83 ft. & 99 ft. Fracture @ 114 ft.
COL-PWS-1005113	4/12/2019	1:04:42 PM	D	43.03	8	VCP	4100	0000	4	1	Fractures @ 39 ft.
COL-PWS-5012303	4/12/2019	3:08:39 PM	D	52.51	8	VCP	4100	0000	4	1	Fractures @ 15 ft.
COL-PWS-1018063	4/12/2019	10:24:37 AM	D	110.67	18	VCP	0000	3100	1	3	Deposits settled other - 20% - @ 94 ft.
COL-PWS-2005011	4/12/2019	1:42:59 PM	D	266.58	8	VCP	0000	0000	1	1	
COL-PWS-1008036	4/12/2019	8:34:42 AM	D	388.38	18	VCP	0000	0000	1	1	
COL-PWS-3017878	4/12/2019	11:12:45 AM	D	316.21	8	VCP	0000	0000	1	1	
COL-PWS-1004068	4/12/2019	8:30:45 AM	D	332.50	8	VCP	0000	0000	1	1	
COL-PWS-1004091	4/12/2019	9:18:58 AM	D	329.47	8	VCP	0000	0000	1	1	
COL-PWS-1005710	4/12/2019	12:06:40 PM	U	223.08	8	VCP	0000	0000	1	1	
COL-PWS-1005751	4/12/2019	12:23:52 PM	D	164.06	8	VCP	0000	0000	1	1	
COL-PWS-1008040	4/12/2019	8:08:28 AM	D	343.56	18	VCP	0000	0000	1	1	
COL-PWS-1008045	4/12/2019	7:46:14 AM	D	345.38	18	VCP	0000	0000	1	1	
COL-PWS-1008051	4/12/2019	10:52:43 AM	U	370.44	18	VCP	0000	0000	1	1	
COL-PWS-30000015	4/12/2019	11:35:55 AM	D	318.07	8	VCP	0000	0000	1	1	
COL-PWS-3000125	4/12/2019	11:49:40 AM	D	337.76	8	VCP	0000	0000	1	1	
COL-PWS-3017884	4/12/2019	11:27:12 AM	D	204.28	8	VCP	1100	0000	1	1	Medium offset joint @ 45 ft.
COL-PWS-4012488	4/12/2019	9:16:21 AM	U	150.28	8	VCP	0000	0000	1	1	
COL-PWS-4012541	4/12/2019	9:55:21 AM	D	350.53	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4017751	4/12/2019	1:31:40 PM	D	311.05	8	VCP	0000	0000	1	1	
COL-PWS-5012233	4/12/2019	2:08:48 PM	U	120.36	8	PVC	0000	0000	1	1	
COL-PWS-5012286	4/12/2019	2:40:04 PM	D	113.42	8	PVC	0000	0000	1	1	
COL-PWS-5012349	4/12/2019	10:50:32 AM	D	315.62	8	PVC	0000	0000	1	1	
COL-PWS-5012357	4/12/2019	11:40:01 AM	D	157.42	8	PVC	0000	0000	1	1	
COL-PWS-5012391	4/12/2019	11:14:48 AM	U	113.13	8	PVC	0000	0000	1	1	
COL-PWS-5012431	4/12/2019	11:49:06 AM	D	155.66	8	PVC	0000	0000	1	1	
COL-PWS-5012465	4/12/2019	1:57:11 PM	D	71.28	8	PVC	0000	0000	1	1	
COL-PWS-5012466	4/12/2019	12:13:04 PM	U	122.91	8	PVC	0000	0000	1	1	
COL-PWS-5012495	4/12/2019	2:04:22 PM	D	91.13	8	PVC	0000	0000	1	1	
COL-PWS-5012503	4/12/2019	11:55:50 AM	D	47.32	8	PVC	0000	0000	1	1	
COL-PWS-5012520	4/12/2019	12:01:43 PM	D	121.44	8	PVC	0000	0000	1	1	
COL-PWS-5012530	4/12/2019	1:28:45 PM	U	129.07	8	PVC	0000	0000	1	1	
COL-PWS-5012547	4/12/2019	12:37:00 PM	U	123.00	8	PVC	0000	0000	1	1	
COL-PWS-5012621	4/12/2019	7:38:50 AM	D	266.74	8	PVC	0000	0000	1	1	
COL-PWS-4012954	4/12/2019	8:51:43 AM	D	351.90	8	VCP	2100	3315	2	3	Roots @ 102 ft., 108 ft., 113 ft., 117 ft., 122 ft., 154 ft., 163 ft. & 174 ft. Water level - sag in pipe - 5% - @ 266 ft.
COL-PWS-1005788	4/12/2019	12:30:15 PM	D	40.44	12	VCP	2100	0000	2	1	Fracture @ 37 ft.
COL-PWS-1004076	4/12/2019	8:56:30 AM	D	322.65	8	VCP	2100	0000	2	1	Fracture@ 98 ft.
COL-PWS-4013083	4/12/2019	8:40:45 AM	D	352.49	8	VCP	2100	0000	2	1	Water level - sag in pipe - 5% - @ 282 ft.
COL-PWS-5012182	4/12/2019	3:03:21 PM	D	50.75	8	VCP	2100	0000	2	1	Fracture @ 47 ft.
COL-PWS-5012425	4/12/2019	1:45:41 PM	U	140.02	8	PVC	2100	0000	2	1	Water level - sag in pipe - 10% - between 45 ft. - 96 ft.
COL-PWS-5012584	4/12/2019	1:20:00 PM	D	62.58	8	PVC	2100	0000	2	1	Water level - sag in pipe - 10% - between 34 ft. - 60 ft.
COL-PWS-1005113	4/12/2019	1:14:13 PM	U	8.17	6	VCP	0000	3100	1	3	Deposits settled fine - 20% - @ 5 ft.
COL-PWS-2005011	4/12/2019	1:39:15 PM	D	34.21	8	VCP	0000	0000	1	1	
COL-PWS-1005113	4/12/2019	12:59:20 PM	D	36.44	8	VCP	0000	0000	1	1	
COL-PWS-1008036	4/12/2019	8:21:53 AM	D	141.77	18	VCP	0000	0000	1	1	
COL-PWS-1008036	4/12/2019	8:28:27 AM	D	118.33	18	VCP	0000	0000	1	1	
COL-PWS-1017979	4/12/2019	8:54:12 AM	U	226.80	18	VCP	0000	0000	1	1	
COL-PWS-3017878	4/12/2019	11:23:15 AM	D	26.81	8	VCP	0000	0000	1	1	
COL-PWS-5012603	4/12/2019	1:01:49 PM	U	106.77	8	PVC	0000	0000	1	1	
COL-PWS-2003846	4/15/2019	9:55:47 AM	D	320.08	8	VCP	3222	0000	3	1	Cracks @ 97 ft., 123 ft. & 270 ft. Fracture @ 190 ft.
COL-PWS-5011641	4/15/2019	8:47:33 AM	D	288.54	8	VCP	3125	4111	3	4	Cracks @ 31 ft., 82 ft., 93 ft., 99 ft., 145 ft. & 259 ft. Roots @ 69 ft. Tap break-in - 10 o'clock - @ 104 ft.
COL-PWS-3000440	4/15/2019	11:46:53 AM	D	35.98	12	VCP	4200	5100	4	5	Deposits settled other - 45% - @ 35 ft. Water level - sag in pipe - 80% - between 24 ft. - 35 ft.
COL-PWS-2017977	4/15/2019	9:43:02 AM	D	338.31	8	VCP	4133	2100	4	2	Fractures @ 4 ft., 8 ft. & 42 ft. Cracks @ 25 ft. & 133 ft. Alignment right - 20% - @ 140 ft.
COL-PWS-2003824	4/15/2019	9:34:01 AM	D	154.06	8	VCP	5141	0000	5	1	Broken pipe @ 148 ft. Fractures @ 6 ft., 127 ft. & 144 ft. Crack @ 73 ft.
COL-PWS-3003816	4/15/2019	10:43:02 AM	D	365.02	10	VCP	4100	4131	4	4	Roots @ 100 ft & 333 ft. Fractures @ 111 ft.
COL-PWS-3003741	4/15/2019	8:00:41 AM	D	38.45	8	VCP	0000	4100	1	4	Root ball @ 37 ft.
COL-PWS-3003343	4/15/2019	8:37:48 AM	D	368.17	8	VCP	0000	3100	1	3	Roots @ 123 ft.
COL-PWS-3003688	4/15/2019	7:29:36 AM	D	217.75	8	VCP	0000	3400	1	3	Roots @ 21 ft., 39 ft., 112 ft. & 207 ft.
COL-PWS-3003819	4/15/2019	10:57:44 AM	D	83.58	10	VCP	0000	3100	1	3	Roots @ 64 ft.
COL-PWS-4010890	4/15/2019	12:52:28 PM	D	362.26	8	VCP	0000	3200	1	3	Roots @ 321 ft., 329 ft. & 332 ft.
COL-PWS-4008580	4/15/2019	2:23:18 PM	U	40.58	15	VCP	0000	0000	1	1	
COL-PWS-2014117	4/15/2019	1:44:46 PM	U	355.59	10	VCP	0000	0000	1	1	
COL-PWS-2014155	4/15/2019	12:53:38 PM	D	380.74	10	VCP	0000	0000	1	1	
COL-PWS-2014166	4/15/2019	1:24:31 PM	D	330.58	12	VCP	0000	0000	1	1	
COL-PWS-2014169	4/15/2019	1:13:06 PM	D	340.02	12	VCP	0000	0000	1	1	
COL-PWS-2021682	4/15/2019	10:28:51 AM	D	350.08	10	VCP	0000	0000	1	1	
COL-PWS-3003589	4/15/2019	8:51:43 AM	D	365.21	8	VCP	0000	0000	1	1	
COL-PWS-3003609	4/15/2019	7:12:25 AM	U	125.01	8	VCP	0000	0000	1	1	
COL-PWS-3003671	4/15/2019	7:45:03 AM	D	59.13	8	VCP	0000	0000	1	1	
COL-PWS-3003697	4/15/2019	7:49:14 AM	D	53.09	8	VCP	0000	0000	1	1	
COL-PWS-3003719	4/15/2019	7:53:04 AM	D	87.05	8	VCP	0000	0000	1	1	
COL-PWS-4000160	4/15/2019	11:34:14 AM	D	301.68	12	VCP	0000	0000	1	1	
COL-PWS-4010891	4/15/2019	1:24:11 PM	U	323.45	8	VCP	0000	0000	1	1	
COL-PWS-4010898	4/15/2019	12:45:55 PM	U	49.87	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-4011051	4/15/2019	11:24:43 AM	U	262.82	8	VCP	0000	0000	1	1	
COL-PWS-4011142	4/15/2019	11:40:44 AM	U	187.93	8	VCP	0000	0000	1	1	
COL-PWS-5011805	4/15/2019	9:10:37 AM	U	124.67	8	VCP	0000	1100	1	1	Roots @ 59 ft.
COL-PWS-5011832	4/15/2019	7:58:18 AM	U	298.90	8	VCP	0000	0000	1	1	
COL-PWS-5011848	4/15/2019	8:10:02 AM	U	14.28	8	VCP	0000	0000	1	1	
COL-PWS-5012670	4/15/2019	7:30:07 AM	D	43.41	12	VCP	0000	0000	1	1	
COL-PWS-4009198	4/15/2019	2:49:33 PM	D	329.21	15	VCP	2100	0000	2	1	Crack @ 167 ft.
COL-PWS-4011050	4/15/2019	11:58:08 AM	D	334.79	8	VCP	2100	0000	2	1	Fracture @ 330 ft.
COL-PWS-5011706	4/15/2019	9:22:37 AM	U	123.98	8	VCP	2100	0000	2	1	Water level - sag in pipe - 5% - @ 113 ft.
COL-PWS-5011739	4/15/2019	8:23:28 AM	D	289.52	8	VCP	2200	1100	2	1	Cracks @ 85 ft. & 283 ft. Roots @ 155 ft.
COL-PWS-4011423	4/15/2019	10:28:16 AM	U	38.23	8	VCP	0000	0000	1	1	
COL-PWS-5015549	4/16/2019	12:30:59 PM	D	331.00	8	VCP	3212	0000	3	1	Cracks @ 37 ft., 50 ft., & 295 ft. Medium offset joint @ 204 ft.
COL-PWS-5015764	4/16/2019	11:59:51 AM	D	23.36	8	VCP	5100	3121	5	3	Collapsed pipe - 100% - @ 23 ft. Deposits settled fine - 10% - @ 0 ft. Obstacles pipe material - 20% - @ 13 ft.
COL-PWS-6015203	4/16/2019	9:50:15 AM	U	270.11	8	VCP	4100	0000	4	1	Fracture @ 185 ft.
COL-PWS-7010389	4/16/2019	12:51:04 PM	U	48.50	8	VCP	5100	0000	5	1	Broken pipe @ 48 ft.
COL-PWS-7010357	4/16/2019	10:46:50 AM	U	222.54	8	VCP	2100	4100	1	4	Camera underwater - between 118 ft. - 222 ft.
COL-PWS-6015199	4/16/2019	10:36:13 AM	D	210.13	8	VCP	0000	4131	1	4	
COL-PWS-6014908	4/16/2019	7:56:58 AM	U	394.13	8	VCP	0000	0000	1	1	
COL-PWS-6014971	4/16/2019	11:04:37 AM	U	340.17	8	VCP	0000	0000	1	1	
COL-PWS-6015028	4/16/2019	7:30:04 AM	D	205.40	8	VCP	1200	0000	1	1	Surface roughness increased chemical - 12 to 12 o'clock - between 190 ft. - 198 ft.
COL-PWS-6015137	4/16/2019	7:51:47 AM	U	17.48	8	VCP	0000	0000	1	1	
COL-PWS-6015142	4/16/2019	8:13:56 AM	D	185.44	8	VCP	0000	0000	1	1	
COL-PWS-6015210	4/16/2019	10:51:28 AM	D	198.82	8	VCP	0000	0000	1	1	
COL-PWS-6015250	4/16/2019	10:05:04 AM	U	113.06	8	VCP	0000	0000	1	1	
COL-PWS-6015258	4/16/2019	8:55:49 AM	D	247.09	8	VCP	0000	0000	1	1	
COL-PWS-6015281	4/16/2019	8:44:13 AM	U	77.48	8	VCP	0000	0000	1	1	
COL-PWS-6015392	4/16/2019	8:50:49 AM	U	2.41	8	VCP	0000	0000	1	1	
COL-PWS-6015414	4/16/2019	9:08:37 AM	D	351.20	8	VCP	0000	0000	1	1	
COL-PWS-6015671	4/16/2019	9:24:21 AM	D	172.22	8	VCP	0000	0000	1	1	
COL-PWS-7009636	4/16/2019	2:55:15 PM	D	60.33	10	VCP	0000	0000	1	1	
COL-PWS-7009662	4/16/2019	1:48:30 PM	D	302.62	8	PVC	0000	0000	1	1	
COL-PWS-7009713	4/16/2019	2:24:05 PM	D	133.76	10	VCP	0000	0000	1	1	
COL-PWS-7010226	4/16/2019	10:27:12 AM	D	349.85	8	VCP	0000	0000	1	1	
COL-PWS-7010432	4/16/2019	11:44:57 AM	D	178.64	8	VCP	0000	0000	1	1	
COL-PWS-7010481	4/16/2019	11:58:44 AM	U	149.70	8	VCP	0000	0000	1	1	
COL-PWS-7010615	4/16/2019	12:11:47 PM	U	325.60	8	VCP	0000	0000	1	1	
COL-PWS-6015198	4/16/2019	10:16:21 AM	U	280.08	8	VCP	2800	0000	2	1	Water level - sag in pipe - 25% - between 10 ft. - 49 ft.
COL-PWS-7009728	4/16/2019	1:58:46 PM	D	203.96	8	VCP	2100	0000	2	1	Water level - sag in pipe - 10% - @ 65 ft.
COL-PWS-5015764	4/16/2019	12:17:03 PM	U	235.45	8	VCP	1100	4338	1	4	Medium offset joint @ 98 ft. Deposits settled fine - 15% - between 164 ft. - 201 ft. Deposits settled fine - 55% - between 221 ft. - 235 ft.
COL-PWS-3002234	4/17/2019	1:20:18 PM	D	114.79	10	VCP	4100	1200	4	1	Multiple fractures @ 21 ft. Roots @ 101 ft. & 110 ft.
COL-PWS-1007333	4/17/2019	4:58:20 AM	D	330.27	8	VCP	0000	3L00	1	3	Roots throughout line.
COL-PWS-1006869	4/17/2019	5:39:34 AM	D	228.20	8	VCP	3200	0000	3	1	Water level - sag in pipe - 40% - between 104 ft. - 113 ft.
COL-PWS-2006588	4/17/2019	6:44:09 AM	D	386.29	8	VCP	5235	3B21	5	3	Broken pipe @ 4 ft. & 66 ft. Deposits settled fine - 15% - between 4 ft. - 89 ft. Water level - sag in pipe - 20% - between 4 ft. - 89 ft. Water level - sag in pipe - 40% - between 143 ft. - 166 ft.
COL-PWS-2006588	4/17/2019	7:14:27 AM	D	198.70	8	VCP	513B	0000	5	1	Broken pipe @ 62 ft. Water level - sag in pipe - 35% - between 134 ft. - 198 ft.
COL-PWS-3001751	4/17/2019	2:08:38 PM	D	124.18	8	VCP	4100	4100	4	4	Multiple fractures @ 98 ft. Camera underwater between 117 ft. - 124 ft.
COL-PWS-4008330	4/17/2019	11:43:37 AM	D	88.10	12	VCP	4100	4100	4	4	Multiple fractures between 34 ft. - 38 ft. Infiltration runner @ 34 ft.
COL-PWS-1008981	4/17/2019	2:49:37 AM	D	375.06	15	VCP	0000	0000	1	1	
COL-PWS-1009001	4/17/2019	3:10:42 AM	U	61.16	15	VCP	0000	0000	1	1	
COL-PWS-1020026	4/17/2019	2:00:55 AM	D	175.22	15	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-1006871	4/17/2019	6:00:48 AM	D	330.42	8	VCP	0000	0000	1	1	
COL-PWS-1007267	4/17/2019	4:53:56 AM	U	42.18	8	VCP	0000	0000	1	1	
COL-PWS-4009634	4/17/2019	9:21:10 AM	D	331.07	12	VCP	0000	0000	1	1	
COL-PWS-4009779	4/17/2019	9:51:14 AM	D	105.40	12	PVC	0000	0000	1	1	
COL-PWS-1006870	4/17/2019	5:49:42 AM	D	300.23	8	VCP	0000	0000	1	1	
COL-PWS-1008951	4/17/2019	3:40:14 AM	U	345.24	8	VCP	0000	0000	1	1	
COL-PWS-1008973	4/17/2019	3:52:21 AM	U	342.07	8	VCP	0000	0000	1	1	
COL-PWS-2002294	4/17/2019	1:28:22 PM	D	90.05	10	VCP	0000	0000	1	1	
COL-PWS-2002323	4/17/2019	1:33:20 PM	D	104.03	10	PVC	0000	0000	1	1	
COL-PWS-2006454	4/17/2019	7:49:02 AM	D	320.20	8	VCP	0000	1200	1	1	Fine roots @ 26 ft. & 36 ft.
COL-PWS-3001548	4/17/2019	2:56:24 PM	D	317.68	8	VCP	0000	0000	1	1	
COL-PWS-3001955	4/17/2019	2:34:51 PM	D	355.61	8	VCP	0000	0000	1	1	
COL-PWS-4009417	4/17/2019	8:17:40 AM	D	159.08	12	PVC	0000	0000	1	1	
COL-PWS-4009516	4/17/2019	8:25:08 AM	D	453.88	12	PVC	0000	0000	1	1	
COL-PWS-2006383	4/17/2019	8:09:49 AM	U	450.13	12	VCP	2500	4300	2	4	Water level - sag in pipe - 25% - between - 248 ft. - 272 ft. Camera underwater - between 255 ft. - 270 ft.
COL-PWS-1008926	4/17/2019	4:11:24 AM	D	334.02	8	VCP	2100	0000	2	1	Fracture @ 296 ft.
COL-PWS-2006389	4/17/2019	7:38:58 AM	D	193.17	8	VCP	2100	1100	2	1	Fracture @ 23 ft. Fine roots @ 137 ft.
COL-PWS-1006869	4/17/2019	5:33:22 AM	D	75.08	8	VCP	3200	0000	3	1	Multiple cracks @ 9 ft. & 70 ft.
COL-PWS-1006871	4/17/2019	6:13:18 AM	D	169.30	8	VCP	0000	0000	1	1	
COL-PWS-4008580	4/17/2019	11:53:40 AM	D	39.31	15	VCP	0000	0000	1	1	
COL-PWS-4009634	4/17/2019	8:37:57 AM	D	145.39	12	PVC	0000	0000	1	1	
COL-PWS-4009779	4/17/2019	9:36:28 AM	D	82.33	12	PVC	0000	0000	1	1	
COL-PWS-2004170	4/18/2019	6:40:02 AM	D	98.45	8	VCP	0000	4100	1	4	Alignment left - 25% - @ 66 ft.
COL-PWS-2004570	4/18/2019	7:18:06 AM	U	251.79	6	VCP	4100	0000	4	1	Multiple fractures @ 38 ft.
COL-PWS-2016280	4/18/2019	11:47:34 AM	U	46.15	8	VCP	5100	0000	5	1	Broken pipe @ 32 ft.
COL-PWS-2014594	4/18/2019	8:33:55 AM	U	152.84	10	VCP	0000	3100	1	3	Obstacles other - 20% - @ 151 ft.
COL-PWS-2004329	4/18/2019	6:12:05 AM	D	221.91	8	VCP	0000	3112	1	3	Roots @ 45 ft., 97 ft. & 126 ft.
COL-PWS-1008384	4/18/2019	2:30:24 AM	D	160.49	10	VCP	0000	0000	1	1	
COL-PWS-1008383	4/18/2019	4:26:35 AM	D	273.36	10	VCP	1100	0000	1	1	Crack @ 45 ft.
COL-PWS-1008387	4/18/2019	4:39:12 AM	D	265.60	10	VCP	0000	0000	1	1	
COL-PWS-1008392	4/18/2019	3:13:53 AM	D	105.27	10	VCP	0000	0000	1	1	
COL-PWS-1008396	4/18/2019	3:20:26 AM	D	193.77	10	VCP	0000	0000	1	1	
COL-PWS-1008398	4/18/2019	4:08:08 AM	D	480.26	10	VCP	0000	0000	1	1	
COL-PWS-1008404	4/18/2019	4:52:02 AM	D	422.75	10	VCP	0000	0000	1	1	
COL-PWS-2011432	4/18/2019	9:47:38 AM	D	300.46	8	VCP	1100	1100	1	1	Crack @ 45 ft. Roots @ 45 ft.
COL-PWS-2011435	4/18/2019	9:43:24 AM	U	23.82	8	VCP	0000	0000	1	1	
COL-PWS-2014591	4/18/2019	2:41:37 PM	U	26.60	8	PVC	0000	0000	1	1	
COL-PWS-2014601	4/18/2019	2:29:36 PM	U	359.23	8	PVC	0000	0000	1	1	
COL-PWS-2014688	4/18/2019	8:56:41 AM	D	243.23	10	VCP	0000	0000	1	1	
COL-PWS-2014689	4/18/2019	9:04:59 AM	D	240.08	10	VCP	0000	0000	1	1	
COL-PWS-2014691	4/18/2019	9:14:26 AM	D	31.50	10	VCP	0000	0000	1	1	
COL-PWS-2014757	4/18/2019	2:54:09 PM	D	355.13	8	PVC	0000	0000	1	1	
COL-PWS-2014926	4/18/2019	7:29:40 AM	D	302.23	8	VCP	0000	0000	1	1	
COL-PWS-2014928	4/18/2019	7:29:40 AM	D	254.49	8	VCP	0000	0000	1	1	
COL-PWS-2014929	4/18/2019	7:29:40 AM	D	304.58	8	VCP	0000	1100	1	1	Vermin cockroach @ 304 ft.
COL-PWS-2014930	4/18/2019	7:29:40 AM	U	304.78	8	VCP	0000	0000	1	1	
COL-PWS-2015167	4/18/2019	7:29:40 AM	D	353.40	8	VCP	0000	1100	1	1	Vermin cockroach @ 353 ft.
COL-PWS-2016200	4/18/2019	12:06:56 PM	U	149.11	8	VCP	0000	0000	1	1	
COL-PWS-2016443	4/18/2019	1:15:00 PM	D	113.81	8	VCP	1200	0000	1	1	Medium offset joint @ 65 ft & 66 ft.
COL-PWS-2016753	4/18/2019	7:29:40 AM	D	49.11	8	VCP	0000	0000	1	1	
COL-PWS-2016786	4/18/2019	7:29:40 AM	D	43.53	8	VCP	0000	0000	1	1	
COL-PWS-2016838	4/18/2019	7:29:40 AM	U	155.09	8	VCP	0000	1100	1	1	Vermin cockroach @ 155 ft.
COL-PWS-2016877	4/18/2019	7:29:40 AM	D	120.48	8	VCP	0000	0000	1	1	
COL-PWS-2016904	4/18/2019	7:29:40 AM	U	174.89	8	VCP	0000	0000	1	1	
COL-PWS-3000587	4/18/2019	8:16:25 AM	D	365.20	12	VCP	0000	1100	1	1	Roots @ 259 ft.
COL-PWS-3001008	4/18/2019	7:51:07 AM	D	103.84	8	VCP	0000	0000	1	1	
COL-PWS-3001288	4/18/2019	7:33:15 AM	D	91.13	8	VCP	0000	0000	1	1	
COL-PWS-2004228	4/18/2019	6:26:23 AM	D	160.02	8	VCP	2100	0000	2	1	Fracture @ 44 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-2016160	4/18/2019	1:43:33 PM	D	353.07	8	VCP	2111	0000	2	1	Medium offset joint @ 7 ft. Water level - sag in pipe - 5% - @ 344 ft.
COL-PWS-2016243	4/18/2019	12:20:35 PM	D	285.80	8	VCP	2100	0000	2	1	Crack @ 231 ft.
COL-PWS-2016343	4/18/2019	12:34:44 PM	D	326.67	8	VCP	2200	0000	2	1	Water level - sag in pipe - 10% - @ 167 ft. Water level - sag in pipe - 10% - @ 298 ft.
COL-PWS-2016365	4/18/2019	1:31:14 PM	D	328.53	8	VCP	2100	0000	2	1	Water level - sag in pipe - 10% - @ 173 ft.
COL-PWS-3000440	4/18/2019	8:44:33 AM	U	286.78	12	VCP	0000	4100	1	4	Camera underwater - between 275 ft. - 286 ft.
COL-PWS-1008386	4/18/2019	2:38:47 AM	D	140.12	10	VCP	0000	0000	1	1	
COL-PWS-1008388	4/18/2019	2:45:31 AM	D	270.13	10	VCP	0000	0000	1	1	
COL-PWS-1008389	4/18/2019	3:07:50 AM	D	72.90	10	VCP	0000	0000	1	1	
COL-PWS-1008416	4/19/2019	1:47:42 PM	D	453.19	15	VCP	3223	2200	3	2	Cracks @ 90 ft., 142 ft., 198 ft., 240 ft. & 259 ft. Tap factory made defective - 10 o'clock - @ 398 ft. Tap factory made defective - 2 o'clock - @ 447 ft.
COL-PWS-5014164	4/19/2019	11:12:44 AM	D	269.96	12	VCP	5100	2200	5	2	Broken pipe @ 263 ft. Tap Break-In Capped - 10'o clock - @ 114 ft. Tap Break-In Capped - 10'o clock - @ 186.2.
COL-PWS-1008972	4/19/2019	12:05:35 PM	D	63.47	15	VCP	0000	3200	1	3	Deposits attached raqqinq - 20% - between 55 ft. - 63 ft.
COL-PWS-5015606	4/19/2019	8:45:06 AM	U	391.60	12	VCP	0000	3100	1	3	Medium roots @ 249 ft.
COL-PWS-1008386	4/19/2019	8:10:29 AM	D	141.47	8	VCP	0000	0000	1	1	
COL-PWS-1008388	4/19/2019	8:20:38 AM	D	272.31	8	VCP	0000	0000	1	1	
COL-PWS-1008389	4/19/2019	9:12:04 AM	D	72.49	12	VCP	0000	0000	1	1	
COL-PWS-1009005	4/19/2019	11:37:40 AM	D	418.30	15	VCP	0000	0000	1	1	
COL-PWS-5014629	4/19/2019	12:04:07 PM	D	148.43	24	VCP	0000	0000	1	1	
COL-PWS-5014669	4/19/2019	12:36:33 PM	D	117.33	24	VCP	0000	0000	1	1	
COL-PWS-5014747	4/19/2019	12:43:22 PM	D	543.35	24	VCP	0000	0000	1	1	
COL-PWS-5015081	4/19/2019	12:59:56 PM	D	127.50	24	VCP	0000	0000	1	1	
COL-PWS-5015145	4/19/2019	9:47:53 AM	D	111.07	15	VCP	0000	0000	1	1	Debris in line.
COL-PWS-5020571	4/19/2019	9:22:32 AM	D	7.72	12	VCP	0000	0000	1	1	Debris in line.
COL-PWS-2006588	4/19/2019	10:35:10 AM	D	69.18	8	CP	3100	0000	3	1	Multiple cracks @ 65 ft.
COL-PWS-1008384	4/19/2019	7:58:15 AM	D	158.52	8	VCP	0000	0000	1	1	
COL-PWS-1008972	4/19/2019	12:39:13 PM	U	9.63	15	VCP	0000	0000	1	1	
COL-PWS-5015134	4/19/2019	1:07:25 PM	D	167.88	24	VCP	0000	0000	1	1	
COL-PWS-5015329	4/19/2019	10:08:03 AM	U	285.90	15	VCP	0000	2700	1	2	Tap Break-In Capped - 10'o clock - @ 6 ft. Tap Break-In Capped - 2'o clock - @ 65 ft. Tap Break-In Capped - 10'o clock - @ 69 ft. Tap Break-In Capped - 11'o clock - @ 131 ft. Tap Break-In Capped - 2'o clock - @ 135 ft. Tap Break-In Capped - 10'o clock - @ 196 ft. Tap Break-In Capped - 10'o clock - @ 264.2 ft. Tap Break-In Capped - 2'o clock - @ 269.9 ft.
COL-PWS-5015606	4/19/2019	7:37:32 AM	D	382.40	12	VCP	0000	2100	1	2	Obstacles other - 5% - @ 382 ft.
COL-PWS-1008912	4/19/2019	12:26:55 PM	D	39.10	15	VCP	2100	0000	2	1	Water level - sag in pipe - 30% - between 32 ft. - 39 ft.
COL-PWS-4011133	4/22/2019	12:51:16 PM	D	41.41	8	PVC	4100	0000	4	1	Deformed - 10% - @37 ft.
COL-PWS-4014010	4/22/2019	10:43:53 AM	U	78.81	8	VCP	0000	4100	1	4	Camera underwater - @ 22 ft.
COL-PWS-4011423	4/22/2019	12:15:07 PM	U	47.48	8	VCP	0000	5131	1	5	Deposits settled fine - 35% - @ 40 ft. Deposits settled compacted - 15% - @ 38 ft.
COL-PWS-7021383	4/22/2019	11:46:38 AM	D	261.75	30	VCP	0000	4100	1	4	Obstacles other - 25% - @ 261 ft.
COL-PWS-4011458	4/22/2019	11:25:48 AM	D	125.35	8	PVC	0000	4100	1	4	Deposits settled other - 25% - @ 123 ft.
COL-PWS-5021380	4/22/2019	8:21:42 AM	D	324.13	27	VCP	0000	3100	1	3	Deposits settled fine - 15% - @ 293 ft.
COL-PWS-4013707	4/22/2019	10:33:13 AM	U	79.45	8	VCP	0000	4131	1	4	Medium roots @ 73 ft. Root ball at joint @ 78 ft.
COL-PWS-2014165	4/22/2019	8:03:12 AM	U	344.18	12	VCP	0000	0000	1	1	
COL-PWS-2014303	4/22/2019	7:44:47 AM	D	335.49	12	VCP	0000	0000	1	1	
COL-PWS-4011124	4/22/2019	12:49:07 PM	U	66.45	8	PVC	0000	0000	1	1	
COL-PWS-4011149	4/22/2019	12:41:10 PM	U	131.12	8	PVC	0000	0000	1	1	
COL-PWS-4013759	4/22/2019	10:24:53 AM	U	163.03	8	VCP	0000	0000	1	1	
COL-PWS-4013854	4/22/2019	9:26:13 AM	D	71.10	8	VCP	0000	0000	1	1	
COL-PWS-4013866	4/22/2019	10:09:32 AM	D	188.07	8	RPM	0000	0000	1	1	
COL-PWS-5021378	4/22/2019	9:43:35 AM	D	7.43	27	VCP	0000	3100	1	3	Obstacles other - 20% - @ 7 ft.
COL-PWS-1007952	4/23/2019	7:34:52 AM	D	219.20	18	VCP	4100	4A31	4	4	Multiple fractures @ 145 ft. Roots @ 147 ft. Root ball - between 153 ft. - 215 ft.
COL-PWS-1007920	4/23/2019	8:16:32 AM	U	138.76	6	VCP	5142	3211	5	3	Hinge cracks - 3 - @ 76 ft. Cracks @ 34 ft., 65 ft. & 89 ft. Fractures @ 40 ft. & 43 ft. Roots @ 8 ft., 15 ft. & 65 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-1007942	4/23/2019	7:53:02 AM	D	29.71	18	VCP	1100	3500	1	3	Roots between - 5 ft. - 29 ft. Crack @ 14 ft.
COL-PWS-1007946	4/23/2019	7:09:19 AM	D	327.34	36	VCP	0000	0000	1	1	
COL-PWS-1007955	4/23/2019	6:57:59 AM	D	212.91	36	VCP	0000	0000	1	1	
COL-PWS-1008307	4/23/2019	4:55:58 AM	U	330.37	15	VCP	0000	0000	1	1	
COL-PWS-1021432	4/23/2019	4:39:24 AM	U	404.08	15	VCP	0000	0000	1	1	
COL-PWS-2005920	4/23/2019	3:34:02 AM	D	410.51	15	VCP	0000	0000	1	1	
COL-PWS-2021302	4/23/2019	3:13:16 AM	D	563.34	15	VCP	0000	0000	1	1	
COL-PWS-2021303	4/23/2019	2:50:29 AM	D	245.19	15	VCP	0000	0000	1	1	
COL-PWS-2021304	4/23/2019	2:47:09 AM	D	47.13	15	VCP	0000	0000	1	1	
COL-PWS-2021305	4/23/2019	2:26:56 AM	D	414.18	15	VCP	0000	0000	1	1	
COL-PWS-1008366	4/23/2019	5:41:46 AM	U	357.25	15	VCP	2200	0000	2	1	Crack @ 6 ft. & 255 ft.
COL-PWS-1017980	4/23/2019	6:21:36 AM	D	224.02	12	VCP	2200	0000	2	1	Crack @ 132 ft. & 145 ft.
COL-PWS-6016822	4/23/2019	9:32:55 AM	D	329.96	12	VCP	2200	2200	2	2	Crack @ 158 ft. & 211 ft. Root tap @ 211 ft. Tap Break-In Capped - 12 o'clock @ 302 ft.
COL-PWS-2002802	4/24/2019	6:06:58 AM	D	324.44	21	VCP	5100	0000	5	1	Broken pipe @ 306 ft.2
COL-PWS-2000073	4/24/2019	4:08:36 AM	D	312.53	42	VCP	0000	3100	1	3	Deposits settled other - 20% - @ 310 ft.
COL-PWS-2017501	4/24/2019	3:14:31 AM	D	58.08	42	VCP	0000	0000	1	1	
COL-PWS-4012980	4/24/2019	10:25:01 AM	D	318.73	8	PVC	0000	0000	1	1	
COL-PWS-2002943	4/24/2019	5:53:23 AM	D	501.49	21	VCP	0000	0000	1	1	
COL-PWS-2002968	4/24/2019	5:39:50 AM	D	497.02	21	VCP	0000	0000	1	1	
COL-PWS-2017480	4/24/2019	12:07:51 PM	D	343.10	8	VCP	0000	0000	1	1	
COL-PWS-2017525	4/24/2019	12:35:38 PM	U	53.14	8	VCP	0000	0000	1	1	
COL-PWS-2017533	4/24/2019	3:19:51 AM	D	275.09	42	VCP	0000	0000	1	1	
COL-PWS-2017603	4/24/2019	12:18:45 PM	D	153.30	8	VCP	0000	0000	1	1	
COL-PWS-2017695	4/24/2019	3:30:57 AM	D	393.45	42	VCP	0000	0000	1	1	
COL-PWS-2017891	4/24/2019	3:49:47 AM	D	262.92	42	VCP	0000	0000	1	1	
COL-PWS-6016423	4/24/2019	8:00:22 AM	D	283.74	12	VCP	0000	0000	1	1	
COL-PWS-5014055	4/24/2019	9:38:17 AM	D	292.97	8	VCP	2100	1100	2	1	Roots @ 214 ft. Large offset joint @ 249 ft.
COL-PWS-6016447	4/24/2019	8:28:02 AM	U	197.92	8	VCP	2B00	0000	2	1	Water level - sag in pipe - 30% - between 128 ft. - 197 ft.
COL-PWS-4013088	4/24/2019	10:56:50 AM	D	55.24	8	PVC	0000	4400	1	4	Camera underwater - between 33 ft. - 55 ft.
COL-PWS-2003033	4/25/2019	3:55:50 AM	D	525.06	21	VCP	4121	0000	4	1	Crack @ 2 ft. Multiple fractures @ 47 ft.
COL-PWS-2003039	4/25/2019	3:50:04 AM	D	95.03	21	VCP	4331	0000	4	1	Multiple fractures @ 59 ft., 63 ft., 76 ft. & 82 ft.
COL-PWS-2001011	4/25/2019	8:03:04 AM	U	113.00	27	VCP	0000	3100	1	3	Deposits settled fine - 15% - @ 113 ft.
COL-PWS-2001371	4/25/2019	8:38:00 AM	D	49.00	27	VCP	0000	4100	1	4	Deposits settled other - 25% - @ 49 ft.
COL-PWS-2001075	4/25/2019	6:21:48 AM	D	175.18	27	VCP	0000	0000	1	1	
COL-PWS-2001117	4/25/2019	6:12:12 AM	D	246.12	27	VCP	0000	0000	1	1	
COL-PWS-2001131	4/25/2019	7:25:31 AM	U	168.67	27	VCP	0000	0000	1	1	
COL-PWS-2001140	4/25/2019	6:27:59 AM	D	196.10	27	VCP	0000	0000	1	1	
COL-PWS-2001290	4/25/2019	6:34:51 AM	D	178.52	27	VCP	1100	0000	1	1	Crack @ 85 ft.
COL-PWS-2001291	4/25/2019	6:44:39 AM	D	96.18	27	VCP	0000	0000	1	1	
COL-PWS-2001365	4/25/2019	8:43:14 AM	U	210.09	27	VCP	0000	0000	1	1	
COL-PWS-2002289	4/25/2019	9:20:31 AM	U	328.02	8	VCP	0000	0000	1	1	
COL-PWS-2002329	4/25/2019	9:40:50 AM	D	320.00	8	VCP	0000	0000	1	1	
COL-PWS-2002635	4/25/2019	4:59:16 AM	D	500.91	21	VCP	0000	0000	1	1	
COL-PWS-2002707	4/25/2019	4:49:02 AM	D	178.05	21	VCP	0000	0000	1	1	
COL-PWS-2002893	4/25/2019	2:59:43 AM	D	481.68	21	VCP	0000	0000	1	1	
COL-PWS-1004615	4/29/2019	12:35:59 PM	D	103.15	8	VCP	3100	1100	3	1	Cracks @ 4 ft. Fine roots @ 56 ft.
COL-PWS-1004696	4/29/2019	1:00:13 PM	D	114.69	8	VCP	4234	3122	4	3	Multiple cracks throughout line. Tab Break-In Defective - 10 o'clock - 26 ft. Tab Break-In Defective - 10 o'clock - 61 ft. Tab Break-In Defective - 10 o'clock - 102 ft.
COL-PWS-1004780	4/29/2019	1:57:34 PM	D	61.70	8	VCP	5133	0000	5	1	Hinge cracks @ 7 ft. Multiple cracks @ 22 ft., 26 ft., 37 ft., & 53 ft.
COL-PWS-1008450	4/29/2019	4:05:26 AM	D	117.63	24	VCP	0000	4100	1	4	Deposits settled other - 25% - @ 117 ft.
COL-PWS-1008417	4/29/2019	4:32:59 AM	D	472.75	24	VCP	0000	3100	1	3	Deposits settled other - 20% - @ 137 ft.
COL-PWS-1008445	4/29/2019	3:46:20 AM	D	8.51	15	VCP	0000	3100	1	3	Deposits settled other - 20% - @ 8 ft.
COL-PWS-5014159	4/29/2019	9:11:01 AM	D	169.35	15	VCP	0000	3122	1	3	Tap Break-In Capped - 2 o'clock - @ 109 ft. Tap Break-In Capped - 10 o'clock - @ 114 ft. Obstacles other - 20% - @ 169 ft.
COL-PWS-5014225	4/29/2019	9:54:58 AM	D	8.70	15	VCP	0000	3100	1	3	Deposits settled other - 20% - @ 8 ft.
COL-PWS-1004661	4/29/2019	11:19:25 AM	D	126.91	8	VCP	0000	4132	1	4	Roots @ 38 ft., 52 ft., 62 ft., 67 ft, & 81 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-1008449	4/29/2019	4:53:02 AM	D	35.30	24	VCP	0000	0000	1	1	
COL-PWS-1009020	4/29/2019	5:50:36 AM	D	301.25	8	PVC	0000	0000	1	1	
COL-PWS-1021423	4/29/2019	1:38:04 AM	D	348.48	8	VCP	0000	2100	1	2	Deposits settled fine - 105 - @ 13 ft.
COL-PWS-1021424	4/29/2019	1:15:18 AM	U	355.81	8	VCP	0000	0000	1	1	
COL-PWS-1021425	4/29/2019	2:12:11 AM	U	265.56	8	VCP	0000	0000	1	1	
COL-PWS-1021431	4/29/2019	2:47:18 AM	U	304.18	12	VCP	0000	0000	1	1	
COL-PWS-2002470	4/29/2019	3:11:48 PM	D	500.62	21	VCP	0000	0000	1	1	
COL-PWS-4012477	4/29/2019	6:45:05 AM	D	392.08	8	VCP	0000	0000	1	1	
COL-PWS-4014953	4/29/2019	7:34:59 AM	D	195.65	8	VCP	0000	0000	1	1	
COL-PWS-1004696	4/29/2019	12:44:14 PM	D	224.20	8	VCP	3300	0000	3	1	Multiple cracks @ 59 ft., 154 ft. & 219 ft.
COL-PWS-2002310	4/29/2019	3:27:28 PM	D	507.85	21	VCP	0000	0000	1	1	
COL-PWS-4012511	4/29/2019	7:05:49 AM	D	24.74	8	VCP	0000	0000	1	1	
COL-PWS-4013088	4/30/2019	9:11:10 AM	D	33.93	8	PVC	3100	4100	3	4	Water level - sag in pipe - 35% - between 26 ft. - 33 ft. Deposits attached grease - @ 33 ft.
COL-PWS-3003553	4/30/2019	7:36:54 AM	D	519.39	18	VCP	3100	0000	3	1	Multiple cracks @ 329 ft.
COL-PWS-2001276	4/30/2019	2:27:02 AM	D	250.50	27	VCP	3100	0000	3	1	Fracture @ 173 ft.
COL-PWS-2001448	4/30/2019	3:02:04 AM	D	249.53	27	VCP	0000	0000	1	1	
COL-PWS-2001591	4/30/2019	3:09:49 AM	D	416.30	27	VCP	0000	0000	1	1	
COL-PWS-2014440	4/30/2019	3:58:05 AM	D	454.17	42	VCP	0000	0000	1	1	
COL-PWS-2014683	4/30/2019	4:12:27 AM	D	475.78	42	VCP	0000	0000	1	1	
COL-PWS-3002596	4/30/2019	5:33:39 AM	D	504.53	24	VCP	0000	0000	1	1	
COL-PWS-3002909	4/30/2019	5:52:24 AM	D	503.26	24	VCP	0000	0000	1	1	
COL-PWS-3003217	4/30/2019	6:42:47 AM	D	508.93	24	VCP	0000	0000	1	1	
COL-PWS-4013133	4/30/2019	9:23:32 AM	D	170.72	8	PVC	0000	0000	1	1	
COL-PWS-4012980	4/30/2019	8:53:32 AM	D	315.13	8	PVC	0000	0000	1	1	
COL-PWS-2002557	5/3/2019	4:45:50 AM	D	610.81	18	VCP	3121	3121	3	3	Cracks @ 192 ft. & 193 ft. Obstacles rocks - 10% - @ 414 ft. Medium roots @ 425 ft.
COL-PWS-2003277	5/3/2019	6:28:08 AM	D	525.75	18	VCP	3423	3221	3	3	Cracks & fractures throughout line. Roots between 379 ft. - 500 ft. Infiltration dripper - @ 149 ft. & 152 ft.
COL-PWS-2002541	5/3/2019	2:46:26 AM	D	447.04	21	VCP	0000	0000	1	1	
COL-PWS-2002553	5/3/2019	2:50:43 AM	D	444.40	21	VCP	0000	0000	1	1	
COL-PWS-2002904	5/3/2019	5:05:28 AM	D	563.98	18	VCP	0000	2200	1	2	Tap Break-In Capped - 7 o'clock - @ 474 ft. Tap Break-In Capped - 12 o'clock - @ 474 ft.
COL-PWS-2021011	5/3/2019	3:47:23 AM	D	448.40	21	VCP	0000	0000	1	1	
COL-PWS-3003540	5/3/2019	8:03:19 AM	D	507.36	30	VCP	0000	1100	1	1	Fine roots @ 54 ft.
COL-PWS-5014423	5/6/2019	4:04:24 AM	D	72.15	24	VCP	0000	3100	1	3	Obstacles rocks - 15% - @ 43 ft.
COL-PWS-5014429	5/6/2019	3:53:02 AM	U	88.35	24	VCP	0000	3100	1	3	Obstacles rocks - 15% - @ 88 ft.
COL-PWS-5014352	5/6/2019	3:15:29 AM	D	14.01	24	VCP	0000	3100	1	3	Obstacles rocks - 15% - @ 12 ft.
COL-PWS-5015329	5/6/2019	7:20:02 AM	D	473.43	21	VCP	0000	2900	1	2	Multiple Break-In Capped- 73 ft., 133 ft., 201 ft., 206 ft., 272 ft., 334 ft., 401 ft., 405 ft., & 467 ft.
COL-PWS-5014533	5/6/2019	4:03:16 AM	D	198.75	24	VCP	0000	2100	1	2	Tap - Break-In Capped - 10 o'clock - @ 54 ft.
COL-PWS-5015342	5/6/2019	8:10:59 AM	D	31.50	21	VCP	0000	2100	1	2	Tap - Break-In Capped - 12 o'clock - @ 28 ft.
COL-PWS-5015366	5/6/2019	5:23:51 AM	D	154.03	24	VCP	0000	0000	1	1	
COL-PWS-5015465	5/6/2019	5:29:53 AM	D	138.23	24	VCP	0000	0000	1	1	
COL-PWS-5015134	5/6/2019	5:01:55 AM	D	221.51	24	VCP	2100	0000	2	1	Crack @ 70 ft.
COL-PWS-5014457	5/6/2019	5:35:38 AM	D	569.33	24	VCP	2100	0000	2	1	Crack @ 264 ft.
COL-PWS-5014429	5/6/2019	4:49:25 AM	D	68.77	24	VCP	0000	3100	1	3	Obstacles rocks - 15% - @ 68 ft.
COL-PWS-2002310	5/7/2019	5:44:36 AM	D	500.06	24	VCP	0000	0000	1	1	
COL-PWS-2001899	5/7/2019	3:22:14 AM	D	376.64	24	VCP	0000	0000	1	1	
COL-PWS-2002134	5/7/2019	3:26:33 AM	D	514.37	24	VCP	0000	0000	1	1	
COL-PWS-2002218	5/7/2019	5:47:27 AM	D	172.82	24	VCP	0000	0000	1	1	
COL-PWS-2002219	5/7/2019	5:46:38 AM	D	408.64	24	VCP	0000	0000	1	1	
COL-PWS-2002275	5/7/2019	5:27:00 AM	D	510.20	24	VCP	0000	0000	1	1	
COL-PWS-2002430	5/7/2019	3:49:40 AM	D	500.76	24	VCP	0000	0000	1	1	
COL-PWS-2002685	5/7/2019	4:51:15 AM	D	512.78	24	VCP	0000	0000	1	1	
COL-PWS-2014132	5/7/2019	8:50:30 AM	D	433.38	42	VCP	0000	0000	1	1	
COL-PWS-6017476	5/8/2019	6:42:30 AM	U	290.88	18	VCP	3600	3121	3	3	Roots @ 40 ft., 44 ft., & 76 ft. Fractures @ 241 ft. & 267 ft. Obstacles other - 20% - @ 290 ft.
COL-PWS-7002178	5/8/2019	3:25:41 AM	D	68.47	42	PE	0000	3100	1	3	Obstacles other - 20% - @ 68 ft. Debris in line.
COL-PWS-7002413	5/8/2019	4:07:09 AM	D	53.17	42	PE	0000	3100	1	3	Deposits settled other - 20% - @ 53 ft. Debris in line.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-6017466	5/8/2019	8:32:00 AM	D	134.66	18	VCP	0000	5100	1	5	Deposits settled other - 35% - @ 134 ft. Build-up blocking camera.
COL-PWS-6017461	5/8/2019	8:54:43 AM	U	236.32	18	VCP	0000	0000	1	1	
COL-PWS-6017468	5/8/2019	8:10:06 AM	U	83.38	18	VCP	0000	0000	1	1	
COL-PWS-6017470	5/8/2019	7:25:14 AM	D	168.24	18	VCP	0000	0000	1	1	
COL-PWS-6017483	5/8/2019	5:11:58 AM	U	497.48	12	VCP	0000	2100	1	2	Root tap in joint - @ 399 ft.
COL-PWS-6017587	5/8/2019	7:51:20 AM	D	169.24	18	VCP	0000	0000	1	1	
COL-PWS-6017476	5/8/2019	6:21:52 AM	D	14.61	18	VCP	0000	3100	1	3	Obstacles rocks - 15% - @ 14 ft.
COL-PWS-2016809	5/9/2019	3:24:06 AM	U	169.93	8	VCP	0000	4100	1	4	Alignment left - 40% - @ 160 ft.
COL-PWS-2003721	5/9/2019	5:39:15 AM	D	127.60	8	VCP	0000	1100	1	1	Vermin cockroach - @ 127 ft.
COL-PWS-2016676	5/9/2019	4:37:47 AM	D	66.58	8	VCP	0000	2111	1	2	Vermin cockroach - @ 0 ft. Deposits settled other - 10% - @ 66 ft.
COL-PWS-2016796	5/9/2019	4:26:14 AM	D	176.79	8	VCP	0000	1100	1	1	Vermin cockroach - @ 176 ft.
COL-PWS-3000375	5/9/2019	9:03:20 AM	U	85.86	8	VCP	0000	0000	1	1	
COL-PWS-4010022	5/9/2019	6:40:28 AM	D	349.91	8	VCP	0000	1100	1	1	Fine roots - @ 252 ft.
COL-PWS-4010112	5/9/2019	6:17:58 AM	U	209.29	8	VCP	0000	0000	1	1	
COL-PWS-4010437	5/9/2019	7:25:20 AM	D	141.61	8	VCP	0000	1200	1	1	Vermin cockroach - @ 5 ft. & 141 ft.
COL-PWS-4010762	5/9/2019	7:46:33 AM	D	167.55	8	PVC	0000	0000	1	1	
COL-PWS-7000819	5/9/2019	9:19:24 AM	U	132.07	8	VCP	0000	0000	1	1	
COL-PWS-1004556	5/9/2019	8:22:51 AM	D	68.47	8	VCP	1100	0000	1	1	Offset joint @ 65 ft.
COL-PWS-2016809	5/9/2019	4:22:28 AM	D	49.29	8	VCP	0000	1100	1	1	Vermin cockroach - @ 49 ft.
COL-PWS-6016606	5/10/2019	7:23:13 AM	U	5.96	6	VCP	4100	0000	4	1	Multiple fractures - @ 2 ft.
COL-PWS-6000154	5/10/2019	5:49:40 AM	U	97.89	6	VCP	5131	0000	5	1	Hole void visible - @ 90 ft. Multiple cracks @ 27 ft.
COL-PWS-6016546	5/10/2019	6:59:39 AM	U	7.55	6	VCP	5121	0000	5	1	Hole soil visible - @ 7 ft. Crack @ 5 ft.
COL-PWS-6016425	5/10/2019	7:37:48 AM	U	483.17	8	VCP	0000	3113	1	3	Roots @ 78 ft., 85 ft., 113 ft. & 160ft.
COL-PWS-6017218	5/10/2019	6:23:51 AM	U	420.66	8	VCP	0000	3200	1	3	Medium roots @ 122 ft. Tap Break-in defective - 12 o'clock - @ 167 ft.
COL-PWS-2000024	5/10/2019	4:46:01 AM	D	9.84	6	VCP	0000	0000	1	1	
COL-PWS-2000138	5/10/2019	4:28:56 AM	D	183.95	6	VCP	0000	0000	1	1	
COL-PWS-2000569	5/10/2019	2:59:04 AM	D	201.73	8	VCP	0000	1100	1	1	Fine roots @ 163 ft.
COL-PWS-2000671	5/10/2019	3:09:20 AM	D	194.98	8	VCP	0000	0000	1	1	
COL-PWS-2000802	5/10/2019	3:19:25 AM	D	111.10	8	VCP	0000	0000	1	1	
COL-PWS-6016437	5/10/2019	8:07:38 AM	U	357.26	8	VCP	0000	0000	1	1	
COL-PWS-6016792	5/10/2019	7:13:34 AM	D	7.06	6	VCP	0000	0000	1	1	
COL-PWS-5016417	5/10/2019	9:15:21 AM	D	340.66	8	VCP	0000	0000	1	1	
COL-PWS-5015260	5/13/2019	6:02:14 AM	D	286.01	10	VCP	4231	4132	4	4	Fractures @ 15 ft., 35 ft. & 117 ft. Water Mark - 70% - @ 191 ft. Deposits settled other - 15% - @ 276 ft. Deposits settled fine - 15% - @ 286 ft.
COL-PWS-5012654	5/13/2019	3:41:40 AM	D	380.41	12	VCP	3121	2100	3	2	Fracture @ 29 ft. & 373 ft. Deposits settled fine - 10% - @ 291 ft.
COL-PWS-5015364	5/13/2019	5:49:05 AM	U	127.30	8	VCP	3621	3100	3	3	Fractures @ 7 ft., 34 ft., 42 ft., 46 ft., 53 ft., 94 ft. & 124 ft. Tap Break-in Defective - 2 o'clock - @ 121 ft.
COL-PWS-5016012	5/13/2019	5:21:32 AM	D	281.14	8	VCP	3521	0000	3	1	Broken pipe - @ 270 ft. Fractures @ 105 ft., 210 ft., 214 ft. & 257 ft.
COL-PWS-5015874	5/13/2019	5:31:50 AM	D	273.98	8	VCP	413C	0000	4	1	Fractures @ 24 ft., 116 ft., 119 ft., 126 ft., 135 ft., 166 ft., 173 ft. & 270 ft.
COL-PWS-1005984	5/13/2019	7:09:49 AM	U	3.98	6	VCP	0000	4100	1	4	Alignment right - 90% - @ 4 ft.
COL-PWS-1005518	5/13/2019	7:18:59 AM	U	318.30	6	VCP	5100	0000	5	1	Deformed 25% - @ 318 ft.
COL-PWS-5009676	5/13/2019	12:53:52 AM	U	244.57	8	VCP	4100	3100	4	3	Multiple fractures @ 220 ft. Deposits settled other - 15% - @ 244 ft.
COL-PWS-5012540	5/13/2019	3:28:19 AM	U	261.56	12	VCP	0000	3121	1	3	Deposits settled fine - 15% - @ 111 ft. Deposits settled fine - 10% - @ 126 ft.
COL-PWS-5016717	5/13/2019	4:48:54 AM	D	354.87	8	VCP	0000	3100	1	3	Medium roots @ 139 ft.
COL-PWS-1005725	5/13/2019	7:47:48 AM	D	31.90	6	VCP	0000	0000	1	1	
COL-PWS-4010610	5/13/2019	1:41:21 AM	U	75.82	8	PVC	0000	0000	1	1	
COL-PWS-4010881	5/13/2019	1:52:11 AM	U	341.76	8	PVC	0000	0000	1	1	
COL-PWS-5015311	5/13/2019	6:37:29 AM	U	83.77	8	VCP	0000	0000	1	1	
COL-PWS-5015331	5/13/2019	6:20:26 AM	D	84.27	8	PVC	0000	0000	1	1	
COL-PWS-5016233	5/13/2019	4:04:04 AM	D	131.48	8	VCP	0000	0000	1	1	

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-5009676	5/13/2019	12:48:34 AM	D	26.24	8	VCP	0000	3124	1	3	Deposits attached grease - 5% - between 8 ft. - 26 ft. Deposits settled fine - 15% - @ 26 ft.
COL-PWS-1005890	5/13/2019	7:13:48 AM	D	5.07	6	VCP	0000	0000	1	1	
COL-PWS-5012540	5/13/2019	2:48:39 AM	D	14.91	12	VCP	0000	2100	1	2	Deposits settled fine - 10% - @ 14 ft.
COL-PWS-1005587	5/14/2019	7:01:27 AM	U	218.51	10	VCP	4123	4131	4	4	Cracks @ 2 ft., 15 ft., 207 ft. & 218 ft. Tap Break-In Intruding - 10 o'clock - @ 102 ft. Obstacles pipe material - 15% - @ 217 ft.
COL-PWS-1005626	5/14/2019	5:41:43 AM	U	286.08	8	VCP	3400	4300	3	4	Water level - sag in pipe - 50% - between 33 ft. - 51 ft. Camera underwater between 36 ft. - 50 ft.
COL-PWS-1006013	5/14/2019	4:46:13 AM	D	297.71	8	VCP	413A	4200	4	4	Cracks @ 12 ft. & 272 ft. Fractures @ 63 ft. Medium offset joint @ 155 ft. Water level - sag in pipe - 50% -between 198 ft. - 249 ft. Camera underwater - between 220 ft. - 230 ft.
COL-PWS-1005631	5/14/2019	6:46:34 AM	U	250.10	10	VCP	3122	2100	3	2	Cracks @ 21 ft. & 29 ft. Fractures @ 38 ft. & 45 ft. Obstacles construction debris - 10% - @ 248 ft.
COL-PWS-7002620	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	42" LINE W/HEAVY DEBRIS / REQUIRE FLOAT MOUNTED CAMERA
COL-PWS-7002821	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	42" LINE W/HEAVY DEBRIS / REQUIRE FLOAT MOUNTED CAMERA
COL-PWS-1007701	5/14/2019	NA	NA	0.00	NA	ML&C	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1005667	5/14/2019	6:33:13 AM	U	100.83	10	VCP	0000	4100	1	4	Camera underwater - @ 32 ft.
COL-PWS-1005808	5/14/2019	2:41:25 AM	D	390.19	27	VCP	0000	3100	1	3	Obstacles other - 20% - @ 13 ft.
COL-PWS-1005924	5/14/2019	3:46:07 AM	D	17.22	27	VCP	0000	4100	1	4	Obstacles other - 25% - @ 8 ft.
COL-PWS-1005691	5/14/2019	5:31:49 AM	D	150.75	12	VCP	0000	0000	1	1	
COL-PWS-1005880	5/14/2019	3:10:09 AM	D	368.51	27	VCP	0000	0000	1	1	
COL-PWS-1005561	5/14/2019	6:07:05 AM	U	92.42	8	VCP	2111	0000	2	1	Medium offset joint - @ 88 ft. large offset joint @ 91 ft.
COL-PWS-1005785	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / RUNS UNDER HILLSIDE / UNABLE TO TV FROM PREVIOUS LINE DUE TO DEBRIS
COL-PWS-2017432	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	MH CHANNEL RESTRICTED
COL-PWS-3000314	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	33" HEAVY DEBRIS LINE
COL-PWS-3021361	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	33" HEAVY DEBRIS LINE
COL-PWS-3021377	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	33" HEAVY DEBRIS LINE
COL-PWS-3021386	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	27" HEAVY DEBRIS LINE
COL-PWS-7002090	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	42" LINE W/HEAVY DEBRIS / REQUIRE FLOAT MOUNTED CAMERA
COL-PWS-7003975	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	42" LINE W/HEAVY DEBRIS / REQUIRE FLOAT MOUNTED CAMERA
COL-PWS-7021382	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	27" HEAVY DEBRIS LINE
COL-PWS-7021389	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	27" HEAVY DEBRIS LINE
COL-PWS-4009294	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	FORCE MAIN AT D/S MH. LINE HAS HEAVY CORROSION.
COL-PWS-4014584	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	HEAVY GREASE IN U/S MH TROUGH
COL-PWS-6017678	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH'S ON AEROSPACE PROPERTY
COL-PWS-1004456	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S LOCATED IN BACKYARDS
COL-PWS-1004676	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BACKYARD MH
COL-PWS-1004682	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BACKYARD MH
COL-PWS-1005125	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	D/S MH NOT FOUND / U/S IS A CLEANOUT
COL-PWS-1006494	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1006498	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007028	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007031	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007077	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007091	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007154	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007176	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH IN PRIVATE PROPERTY YARD
COL-PWS-1007178	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007207	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT / MH IN PRIVATE PROPERTY YARD
COL-PWS-1007233	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH IN PRIVATE PROPERTY YARD
COL-PWS-1007237	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007239	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED

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COL-PWS-1007250	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT / MH IN PRIVATE PROPERTY YARD
COL-PWS-1007279	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007373	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007388	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007410	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007455	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007481	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BACKYARD MH
COL-PWS-1007483	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007567	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007570	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007611	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007617	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007702	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007750	5/14/2019	NA	NA	0.00	NA	ML&C	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1007791	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / CAN'T BE ACCESSED
COL-PWS-1008029	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	ASK OPERATOR WHY NO U/S ATTEMPT.
COL-PWS-2000786	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2000807	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2000868	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2000873	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2000880	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2000919	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2001007	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2001178	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2001185	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2001238	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2001250	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2001261	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2001263	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2001332	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001363	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001393	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001394	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001483	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001502	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001527	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001540	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001560	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001615	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001657	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001688	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001764	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001810	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001842	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001907	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001927	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001949	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2001977	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2002022	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2002130	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2002305	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2002478	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2002508	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2003923	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2003944	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2003959	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-2004026	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-2004070	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004086	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-2004092	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA

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COL-PWS-2004109	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004141	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004186	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-2004247	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004250	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004346	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004371	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004444	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004447	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004475	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2012258	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2012543	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	CONSTRUCTION ON ROAD / NO MH ACCESS
COL-PWS-2012730	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	CONSTRUCTION ON ROAD / NO MH ACCESS
COL-PWS-2012734	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	CONSTRUCTION ON ROAD / NO MH ACCESS
COL-PWS-2020367	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-2021013	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-3003657	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003674	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003707	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003740	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003914	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003918	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003948	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003951	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003993	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3004648	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004867	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004963	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3017932	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	ARLINGTON TRAFFIC CONTROL / SHORT 50ft LINE MISSED
COL-PWS-4010750	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	BOTH U/S & D/S MH'S ARE IN BACKYARDS
COL-PWS-4011436	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-4011688	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-4014954	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-4015253	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE D/S WAS DIRTY / U/S MH IS IN BACKYARD
COL-PWS-4016254	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / RUNS NEXT TO WASHWAY / REQUIRE TREE TRIMMING TO ACCESS
COL-PWS-4016291	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / RUNS NEXT TO WASHWAY / REQUIRE TREE TRIMMING TO ACCESS
COL-PWS-4016380	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / RUNS NEXT TO WASHWAY / REQUIRE TREE TRIMMING TO ACCESS
COL-PWS-4016950	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / RUNS NEXT TO WASHWAY / REQUIRE TREE TRIMMING TO ACCESS
COL-PWS-5009083	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINES NOT ATTEMPTED POSSIBLE EASEMENT
COL-PWS-5009084	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINES NOT ATTEMPTED POSSIBLE EASEMENT
COL-PWS-5009102	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINES NOT ATTEMPTED POSSIBLE EASEMENT
COL-PWS-5009139	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINES NOT ATTEMPTED POSSIBLE EASEMENT
COL-PWS-5015570	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT MH'S IN BACKYARDS
COL-PWS-6017443	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	PARTIALLY HIGHLIGHTED LINES
COL-PWS-6017446	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	PARTIALLY HIGHLIGHTED LINE / LATERAL TO MAIN NOT TO MH
COL-PWS-6017599	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH'S ON AEROSPACE PROPERTY
COL-PWS-6017614	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	D/S MH TROUGH CHANNEL RESTRICTED / U/S IS A CLEANOUT
COL-PWS-6017618	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	D/S MH TROUGH CHANNEL RESTRICTED / U/S IS A CLEANOUT
COL-PWS-6017712	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH'S ON AEROSPACE PROPERTY
COL-PWS-7001549	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH'S IN BACKYARDS
COL-PWS-7001753	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH'S IN BACKYARDS
COL-PWS-7001827	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH'S IN BACKYARDS

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-7001996	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	U/S MH EASEMENT / D/S MH HIGH FLOW
COL-PWS-7003022	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	D/S MH LOCKED / U/S IS A CLEANOUT
COL-PWS-7016917	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-1004407	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004411	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004440	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004442	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004445	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004454	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004459	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004498	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004517	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004562	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004563	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004578	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004582	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004600	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004605	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004629	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004699	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004717	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004769	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004778	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004827	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004837	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004844	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004858	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004870	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004876	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004903	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004935	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004943	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004944	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004979	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1005032	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1005035	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1005409	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1005410	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1005642	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1005817	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1005819	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1006015	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	NIGHT WORK-TRAFFIC CONTROL / UNCOMPLETED
COL-PWS-2003842	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2003843	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2003939	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2003956	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2003979	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2003987	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2003988	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-2003991	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2003992	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004001	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004007	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-2004010	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004016	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004024	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004029	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004031	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-2004045	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004048	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA

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COL-PWS-2004050	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004051	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004053	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004055	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004059	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004063	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004071	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004072	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-2004087	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-2004184	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-2004285	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-2021012	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003757	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003770	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003774	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003805	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003807	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003808	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003809	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3003952	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3004707	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004710	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004722	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004776	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004779	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004882	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004893	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004894	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004898	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004907	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004927	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004953	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004960	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004981	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004990	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3004992	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3005007	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3005017	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3005018	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3005023	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3005063	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3005064	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-3018061	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-0330929	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	51" LINE INSIDE RIVERSIDE PLANT / REQUIRE FLOAT MOUNTED CAMERA
COL-PWS-1008183	5/14/2019	NA	NA	0.00	NA	CIP	NA	NA	UNK	UNK	MH FROM LIFT STATION HAS TOO MUCH FLOW. PIPE 100% UNDER WATER
COL-PWS-1008184	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH FROM LIFT STATION HAS TOO MUCH FLOW. PIPE 100% UNDER WATER
COL-PWS-1008463	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	UNKNOWN WHY ID IS NOT COMPLETED.
COL-PWS-1020055	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH FROM LIFT STATION HAS TOO MUCH FLOW. PIPE 100% UNDER WATER
COL-PWS-2011839	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	D/S MH TRAFFIC CONTROL SYCAMORE CANYON / U/S MH SUCK
COL-PWS-2014927	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	DIRTY
COL-PWS-2015720	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	SHORT 50FT LINE MISSED
COL-PWS-2016976	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	MH REQUIRES CONFINED ENTRY / OPPOSITE MH CHANNEL RESTRICTED
COL-PWS-2017500	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	SHORT 10FT LINE MISSED
COL-PWS-2017576	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	SHORT 10FT LINE MISSED

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-3021741	5/14/2019	NA	NA	0.00	NA	Concrete	NA	NA	UNK	UNK	51" LINE INSIDE RIVERSIDE PLANT / REQUIRE FLOAT MOUNTED CAMERA
COL-PWS-4009567	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	VAN BUREN BL TRAFFIC CONTROL / NOT ATTEMPTED
COL-PWS-4009633	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	VAN BUREN BL TRAFFIC CONTROL / NOT ATTEMPTED
COL-PWS-1008397	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	SIPHON
COL-PWS-2014393	5/14/2019	NA	NA	0.00	NA	DIP	NA	NA	UNK	UNK	SIPHON
COL-PWS-2014431	5/14/2019	NA	NA	0.00	NA	RCP	NA	NA	UNK	UNK	SIPHON
COL-PWS-1004609	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE RE.LOCATED_NOT DOING
COL-PWS-1004625	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE RE.LOCATED_NOT DOING
COL-PWS-1008943	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE DOES NOT RUN NORTH/SOUTH AS SHOWN. 90deg BEND TO EAST.
COL-PWS-1009009	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE DOES NOT EXIST. 90' DEGREE BEND AT MH 1014012, NO CONNECTING LINE.
COL-PWS-2003424	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	CONSTRUCTION PLUG IN D/S MH APPEARS NOT IN USE YET, NO HOMES BUILT FOR LINE
COL-PWS-2004288	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE RE.LOCATED_NOT DOING
COL-PWS-2004376	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE RE.LOCATED_NOT DOING
COL-PWS-2004618	5/14/2019	NA	NA	0.00	NA	CIP	NA	NA	UNK	UNK	LINE RE.LOCATED_NOT DOING
COL-PWS-3004565	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE RE.LOCATED_NOT DOING
COL-PWS-6014167	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE DOES NOT EXIST , NO LATERALS IN D/S MH FROM SOUTH WEST
COL-PWS-6014176	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE DOES NOT EXIST , NO LATERALS IN D/S MH FROM SOUTH WEST
COL-PWS-2004378	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE RE.LOCATED_NOT DOING
COL-PWS-2004481	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE RE.LOCATED_NOT DOING
COL-PWS-2004482	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE RE.LOCATED_NOT DOING
COL-PWS-2004587	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE RE.LOCATED_NOT DOING
COL-PWS-1005327	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-1005108	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	D/S MH NOT FOUND / U/S IS A CLEANOUT
COL-PWS-1005121	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	D/S MH NOT FOUND / U/S IS A CLEANOUT
COL-PWS-1005152	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	D/S MH NOT FOUND / U/S IS A CLEANOUT
COL-PWS-1005187	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	CAN'T LOCATE MH'S / OR DETERMINE ACTUAL LINE DIRECTION
COL-PWS-1005265	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	CAN'T LOCATE MH'S / OR DETERMINE ACTUAL LINE DIRECTION
COL-PWS-1005371	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-1005625	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-1005637	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-1020162	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-2017159	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH'S BURIED
COL-PWS-2017314	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH'S BURIED
COL-PWS-2017316	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH'S BURIED
COL-PWS-2017669	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT / MH'S BURIED
COL-PWS-2017851	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	EASEMENT / MH'S BURIED
COL-PWS-2017955	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / MH'S BURIED
COL-PWS-4009147	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	U/S MH NOT FOUND. D/S IS IN INTERSECTION, FORCE MAIN CONNECTS.
COL-PWS-7009466	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	D/S MH BURIED. U/S IS A CLEANOUT__GRADE TOO STEEP TO CONTINUE FROM PREVIOUS LINE
COL-PWS-7009643	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	D/S MH BURIED. U/S IS A CLEANOUT__GRADE TOO STEEP TO CONTINUE FROM PREVIOUS LINE

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-1004885	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH BURIED / PREVIOUS LINE HAS VERY DEEP MH / CONFINED ENTRY ACCESS
COL-PWS-1004929	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	CAN'T LOCATE MH'S / OR DETERMINE ACTUAL LINE DIRECTION
COL-PWS-1005002	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	CAN'T LOCATE MH'S / OR DETERMINE ACTUAL LINE DIRECTION
COL-PWS-1005014	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	CAN'T LOCATE MH'S / OR DETERMINE ACTUAL LINE DIRECTION
COL-PWS-1005069	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	CAN'T LOCATE MH'S / OR DETERMINE ACTUAL LINE DIRECTION
COL-PWS-1005133	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	CAN'T LOCATE MH'S / OR DETERMINE ACTUAL LINE DIRECTION
COL-PWS-1005155	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-1005173	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	CAN'T LOCATE MH'S / OR DETERMINE ACTUAL LINE DIRECTION
COL-PWS-1005227	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-1005286	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-1005426	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-1005534	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-1005544	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-1005571	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-1008231	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	APPEARS TO HAVE BEEN TELEVISED AS ID 1008197
COL-PWS-1008475	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	UNKNOWN WHY ID IS NOT COMPLETED.
COL-PWS-2011905	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	DOES NOT EXIST
COL-PWS-4013194	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	DOES NOT EXIST
COL-PWS-7002178	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	42" LINE W/HEAVY DEBRIS / REQUIRE FLOAT MOUNTED CAMERA
COL-PWS-7002413	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	42" LINE W/HEAVY DEBRIS / REQUIRE FLOAT MOUNTED CAMERA
COL-PWS-1005631	5/14/2019	6:41:40 AM	U	20.23	10	VCP	3100	0000	3	1	Cracks @ 16 ft.
COL-PWS-7021383	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	27" HEAVY DEBRIS LINE
COL-PWS-1004359	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BIKE TRAIL
COL-PWS-1004606	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT / BACKYARD MH
COL-PWS-2017501	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	SHORT 10FT LINE MISSED
COL-PWS-2020234	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-3001733	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	MH'S LOCATED IN BACKYARDS
COL-PWS-3003741	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT AREA
COL-PWS-4017863	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	EASEMENT
COL-PWS-1008473	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	UNKNOWN WHY ID IS NOT COMPLETED.
COL-PWS-1008372	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	SIPHON
COL-PWS-6017678	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	SIPHON
COL-PWS-1009010	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	LINE DOES NOT EXIST. 90' DEGREE BEND AT MH 1014012, NO CONNECTING LINE.
COL-PWS-1004849	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	CAN'T LOCATE MH'S / OR DETERMINE ACTUAL LINE DIRECTION
COL-PWS-1005113	5/14/2019	NA	NA	0.00	NA	VCP	NA	NA	UNK	UNK	U/S MH NOT FOUND / UNABLE TO SURVEY U/S FROM PREVIOUS DIRTY LINE
COL-PWS-1005327	5/14/2019	NA	NA	0.00	NA	UNK	NA	NA	UNK	UNK	MH'S NOT LOCATED FOR INSPECTION / LINE POSSIBLY RE-ROUTED
COL-PWS-4017863	5/15/2019	7:08:00 AM	D	7.17	12	VCP	0000	4100	1	4	Deposits settled other - 30% - @ 7 ft.
COL-PWS-1005707	5/15/2019	4:52:33 AM	D	106.24	27	VCP	0000	3100	1	3	Deposits settled other - 20% - @ 102 ft.
COL-PWS-1005758	5/15/2019	3:50:23 AM	D	27.19	27	VCP	0000	3100	1	3	Deposits settled other - 20% - @ 10 ft.

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-1005588	5/15/2019	4:25:05 AM	D	591.74	27	VCP	0000	0000	1	1	
COL-PWS-1005678	5/15/2019	4:41:08 AM	D	46.15	27	VCP	0000	0000	1	1	
COL-PWS-1005714	5/15/2019	3:16:38 AM	D	104.26	27	VCP	0000	0000	1	1	
COL-PWS-1005777	5/15/2019	4:18:26 AM	D	55.23	27	VCP	0000	0000	1	1	
COL-PWS-4017210	5/15/2019	6:07:44 AM	U	174.30	8	VCP	0000	0000	1	1	
COL-PWS-4017296	5/15/2019	5:52:30 AM	U	316.33	8	VCP	0000	0000	1	1	
COL-PWS-4017354	5/15/2019	5:42:34 AM	U	62.00	8	VCP	0000	0000	1	1	
COL-PWS-4017735	5/15/2019	6:52:02 AM	D	181.27	10	VCP	0000	0000	1	1	
COL-PWS-1005890	5/17/2019	6:15:16 AM	U	216.65	6	VCP	5241	5100	5	5	Obstacles construction debris - 75% - @ 216 ft.
COL-PWS-1005818	5/17/2019	7:35:07 AM	D	320.36	6	VCP	5247	1100	5	1	Broken pipe - @ 1 ft. & 5 ft. Fractures and cracks throughout line. Roots @ 113 ft. Medium offset joint @ 318 ft.
COL-PWS-2005867	5/17/2019	9:36:11 AM	D	189.21	8	VCP	2200	2200	2	2	Deposits attached grease - 5% - @ 58 ft. Deposits attached grease - 5% - @ 64 ft. Water level - sag in pipe - 10% - between 86 ft. - 96 ft.
COL-PWS-4017161	5/20/2019	2:15:20 PM	D	365.66	10	VCP	0000	3B00	1	3	Medium roots at joint -between 21 ft. - 107 ft.
COL-PWS-3001440	5/20/2019	8:51:01 AM	U	294.97	8	VCP	3100	0000	3	1	Spiral fracture - @ 128 ft.
0	5/20/2019	1:38:21 PM	D	280.13	10	VCP	0000	413J	1	4	Medium roots at joint - 2 7 ft., 14 ft., 15 ft., & 280 ft. Medium roots in barrel - @ 280 ft.
COL-PWS-4016668	5/20/2019	1:21:58 PM	U	115.40	10	PVC	0000	4100	1	4	Medium roots in Barrel - @ 113 ft.
COL-PWS-3001733	5/20/2019	11:53:34 AM	D	115.30	8	VCP	0000	0000	1	1	
COL-PWS-3001325	5/20/2019	12:29:39 PM	D	176.26	8	VCP	0000	0000	1	1	
COL-PWS-3001515	5/20/2019	8:41:51 AM	U	163.33	8	VCP	0000	0000	1	1	
COL-PWS-3001582	5/20/2019	8:25:30 AM	U	76.40	8	VCP	0000	0000	1	1	
COL-PWS-3001611	5/20/2019	7:59:04 AM	D	124.63	8	VCP	0000	0000	1	1	
COL-PWS-3001811	5/20/2019	9:35:09 AM	D	314.42	8	VCP	0000	0000	1	1	
COL-PWS-4015639	5/21/2019	9:08:59 AM	U	6.02	8	VCP	0000	3100	1	3	Deposits settled fine - 15% - @ 6 ft.
COL-PWS-3003442	5/21/2019	7:30:33 AM	D	223.69	8	VCP	0000	3600	1	3	Medium root at joint - @ 18 ft., 56 ft., 80 ft., 98 ft. 131 ft. & 155 ft.
COL-PWS-4017433	5/21/2019	9:26:35 AM	D	404.16	8	VCP	0000	3311	1	3	Medium roots at joint - @ 289 ft., 357 ft.. 371 ft. & 396 ft.
COL-PWS-1007086	5/21/2019	12:01:20 PM	U	165.13	8	VCP	0000	0000	1	1	
COL-PWS-3003680	5/21/2019	8:26:27 AM	U	138.66	8	VCP	0000	0000	1	1	
COL-PWS-3003717	5/21/2019	8:07:21 AM	D	226.39	8	VCP	0000	0000	1	1	
COL-PWS-3003749	5/21/2019	7:56:23 AM	D	227.80	8	VCP	0000	0000	1	1	
COL-PWS-5012553	5/21/2019	11:23:43 AM	U	135.35	8	VCP	0000	0000	1	1	
COL-PWS-5012587	5/21/2019	11:10:57 AM	U	41.91	8	VCP	2100	0000	2	1	Crack @ 34 ft.
COL-PWS-4015639	5/21/2019	9:01:37 AM	D	7.92	8	VCP	0000	3100	1	3	Deposits settled fine - 15% - @ 7 ft.
COL-PWS-3003797	5/22/2019	12:48:50 AM	D	653.81	21	VCP	4133	4B31	4	4	Cracks, fractures and roots throughout line.
COL-PWS-3003802	5/22/2019	1:25:36 AM	D	221.48	21	VCP	4131	3121	4	3	Cracks @ 105 ft., 126 ft. & 162 ft. Infiltration dripper - 11 o'clock - @ 105 ft. Infiltration weeper - 12 o'clock - @ 142 ft. Infiltration stain - 12 o'clock - @ 194 ft. Fractures @ 142 ft. & 194 ft.
COL-PWS-2001333	5/22/2019	3:31:04 AM	D	180.87	18	VCP	3100	0000	3	1	Fracture @ 2 ft.
COL-PWS-2001322	5/22/2019	4:00:27 AM	U	78.41	18	VCP	0000	4131	1	4	Obstacles other - 15% - 68 ft. Obstacles other - 25% - 76 ft.
COL-PWS-1008826	5/22/2019	2:51:29 AM	U	309.31	8	VCP	2312	0000	2	1	Medium offset joint @ 195 ft. & 272 ft. Water level - sag in pipe - 20% - between 252 ft. - 269 ft.
COL-PWS-1007914			D	565.50	18	VCP	2111	3100	2	1	
COL-PWS-2012687			D	394.10	12	SP	3200	0000	3	1	Corrosion
COL-PWS-2012689			D	392.50	12	SP	3200	0000	3	1	Corrosion
COL-PWS-5016500			D	791.60	12	VCP	4132	3200	4	1	
COL-PWS-1008470			U	34.60	18	SP	4121	0000	4	1	
COL-PWS-3001693			D	140.90	18	VCP	5355	0000	5	1	
COL-PWS-2005304			D	289.40	8	VCP	0000	4131	1	1	Sag
COL-PWS-5015502			D	132.40	8	VCP	3100	2200	3	1	
COL-PWS-5015531			D	355.30	8	VCP	3211	0000	3	1	
COL-PWS-1008473			U	36.40	18	SP	3200	0000	3	1	
COL-PWS-5015569			D	347.60	8	VCP	3125	4100	3	1	
COL-PWS-7010941			U	173.60	8	VCP	3322	4334	3	1	
COL-PWS-3002307			D	197.20	8	VCP	3200	3300	3	1	Sag

Asset ID	CCTV Date	CCTV Time	CCTV Flow Direction	CCTV Length (ft)	Pipe Diameter (in)	Material	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes and Comments
COL-PWS-7001567			D	159.30	8	VCP	4231	4132	4	1	
COL-PWS-7009358			D	0.00	8	VCP	423A	4931	4	1	
COL-PWS-2006148			D	125.80	8	VCP	4132	3200	4	1	Sag
COL-PWS-5017577			D	394.20	8	VCP	5143	2100	5	1	
COL-PWS-5017745			U	193.20	8	VCP	5141	0000	5	1	
COL-PWS-7010929			D	178.00	8	VCP	5349	3621	5	1	Roots
COL-PWS-7012544			D	326.30	8	VCP	5132	3300	5	1	
COL-PWS-6016994			D	648.70	10	VCP	5141	443A	5	1	Roots, Sag
COL-PWS-7018005			D	#REF!	8	VCP	3511	4100	3	1	
COL-PWS-1008498			D	288.50	6	VCP	3100	2311	3	1	
COL-PWS-1006973			D	146.20	6	VCP	5141	4134	5	1	Roots
COL-PWS-1007038			D	218.10	6	VCP	5341	3122	5	1	
COL-PWS-1007081			D	0.00	6	VCP	5343	3200	5	1	
COL-PWS-2005292			D	497.70	6	VCP	5121	0000	5	1	
COL-PWS-2012690			D	392.10	12	VCP	3200	0000	3	1	
COL-PWS-2004945			D	131.30	8	VCP	4100	3122	4	1	
COL-PWS-2005086			D	359.40	8	VCP	4121	4127	4	1	
COL-PWS-4004741			D	395.70	8	RPM	4111	5133	4	1	
COL-PWS-5015787			U	361.80	8	VCP	4131	2311	4	1	
COL-PWS-5017411			D	244.50	8	VCP	5131	3100	5	1	
COL-PWS-7010946			U	89.40	8	VCP	5111	3321	5	1	
COL-PWS-6013688			D	320.40	8	VCP	0000	4100	1	1	
COL-PWS-7008064			D	144.30	8	RPM	0000	4131	1	1	
COL-PWS-5015761			D	116.10	8	VCP	0000	4200	1	1	
COL-PWS-5015993			D	299.00	8	VCP	0000	4100	1	1	
COL-PWS-5016213			D	241.90	8	VCP	0000	4100	1	1	
COL-PWS-6017247			D	52.30	10	VCP	0000	4200	1	1	
COL-PWS-5016109			D	297.50	8	VCP	0000	4131	1	1	
COL-PWS-7001940			D	281.00	8	VCP	0000	4231	1	1	
COL-PWS-4007448						UNK	0000	0000	1	1	
COL-PWS-5015651			D	225.90	8	VCP	0000	0000	1	1	
COL-PWS-5015775			D	139.00	8	VCP	0000	2100	1	1	
COL-PWS-5015892			D	299.40	8	VCP	0000	0000	1	1	
COL-PWS-5016312			D	0.00		UNK	0000	0000	1	1	
COL-PWS-5016318			D	279.40	8	VCP	0000	0000	1	1	
Santa Ana Trunk Sewer				6043.00	48	FRP	0000	0000	1	1	
COL-PWS-7001864			U	203.00	8	VCP	1100	5142	1	1	
COL-PWS-5015476			U	389.90	8	VCP	2100	312A	2	1	Deposits, Roots
COL-PWS-1004849			D	203.80	8	VCP	5141	4131	5	1	Sag
COL-PWS-3001584			U	156.50	8	VCP	5243	3223	5	1	Roots
COL-PWS-7000459			D	348.00	8	VCP	5100	4111	5	1	
COL-PWS-7000482			D	348.00	8	VCP	5100	4111	5	1	
COL-PWS-2003236			D	268.00	8	RPM	0000	0000	1	1	
COL-PWS-3001675			U	96.10	8	VCP	0000	2100	1	1	

Appendix 2C

MANHOLE CONDITION ASSESSMENT SUMMARY AND STRUCTURAL AND O&M GRADE

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1005793	9/24/2018 08:30	0000	0000	1	1	
COL-MWS-1012118	9/24/2018 08:45	0000	0000	1	1	
COL-MWS-1012119	9/24/2018 08:55	0000	0000	1	1	
COL-MWS-1005609	9/24/2018 09:05	0000	0000	1	1	
COL-MWS-1005608	9/24/2018 09:10	0000	0000	1	1	
COL-MWS-1014058	9/24/2018 09:17	0000	0000	1	1	
COL-MWS-1005792	9/24/2018 09:23	0000	0000	1	1	
COL-MWS-1012084	9/24/2018 09:31	0000	0000	1	1	
COL-MWS-1012083	9/24/2018 09:39	0000	0000	1	1	
COL-MWS-1012085	9/24/2018 09:45	0000	0000	1	1	
COL-MWS-1012087	9/24/2018 09:48	0000	0000	1	1	
COL-MWS-1012097	9/24/2018 09:55	0000	0000	1	1	
COL-MWS-1012098	9/24/2018 10:01	0000	0000	1	1	
COL-MWS-1012100	9/24/2018 10:06	0000	0000	1	1	
COL-MWS-1000688	9/24/2018 10:23	0000	0000	1	1	
COL-MWS-1000604	9/24/2018 10:35	0000	0000	1	1	
COL-MWS-1000603	9/24/2018 10:46	0000	0000	1	1	
COL-MWS-1000617	9/24/2018 11:06	0000	0000	1	1	
COL-MWS-1000616	9/24/2018 11:11	0000	0000	1	1	
COL-MWS-1000615	9/24/2018 11:16	0000	0000	1	1	
COL-MWS-1000607	9/24/2018 11:23	0000	0000	1	1	
COL-MWS-1000621	9/24/2018 11:31	0000	0000	1	1	
COL-MWS-1000620	9/24/2018 11:37	0000	0000	1	1	
COL-MWS-1000629	9/24/2018 11:42	0000	0000	1	1	
COL-MWS-1000628	9/24/2018 11:48	0000	0000	1	1	
COL-MWS-1000630	9/24/2018 11:55	0000	0000	1	1	
COL-MWS-1000632	9/24/2018 12:00	0000	0000	1	1	
COL-MWS-1000631	9/24/2018 12:04	0000	0000	1	1	
COL-MWS-1000644	9/24/2018 12:10	0000	0000	1	1	
COL-MWS-1000645	9/24/2018 12:14	0000	0000	1	1	
COL-MWS-1000610	9/24/2018 12:21	0000	0000	1	1	
COL-MWS-1012104	9/24/2018 12:30	0000	0000	1	1	
COL-MWS-1005708	9/24/2018 12:35	0000	0000	1	1	
COL-MWS-1005699	9/24/2018 12:42	0000	0000	1	1	
COL-MWS-1000689	9/24/2018 12:49	0000	0000	1	1	
COL-MWS-1000685	9/24/2018 12:54	0000	0000	1	1	
COL-MWS-1005709	9/24/2018 13:07	0000	0000	1	1	
COL-MWS-1005712	9/24/2018 13:14	0000	0000	1	1	
COL-MWS-1005711	9/24/2018 13:20	0000	0000	1	1	
COL-MWS-1005713	9/24/2018 13:48	0000	0000	1	1	
COL-MWS-1012105	9/24/2018 13:53	0000	0000	1	1	
COL-MWS-1000653	9/24/2018 13:59	0000	0000	1	1	
COL-MWS-1000655	9/24/2018 14:04	0000	0000	1	1	
COL-MWS-1005902	9/24/2018 14:10	0000	0000	1	1	
COL-MWS-1000654	9/24/2018 14:15	0000	0000	1	1	
COL-MWS-1005901	9/24/2018 14:24	3100	0000	3	1	Broken Bench.
COL-MWS-1000651	9/24/2018 14:30	5100	0000	5	1	Broken Void Visible.
COL-MWS-1005900	9/24/2018 14:41	0000	0000	1	1	
COL-MWS-1000671	9/25/2018 07:30	0000	0000	1	1	
COL-MWS-1005908	9/25/2018 07:39	0000	0000	1	1	
COL-MWS-1000676	9/25/2018 07:44	0000	0000	1	1	
COL-MWS-1000675	9/25/2018 07:49	0000	0000	1	1	
COL-MWS-1000674	9/25/2018 07:54	0000	0000	1	1	
COL-MWS-1005906	9/25/2018 07:57	0000	0000	1	1	
COL-MWS-1005907	9/25/2018 07:59	0000	0000	1	1	
COL-MWS-1000672	9/25/2018 08:08	0000	0000	1	1	
COL-MWS-1000677	9/25/2018 08:14	0000	0000	1	1	
COL-MWS-1000678	9/25/2018 08:21	0000	0000	1	1	
COL-MWS-1005476	9/25/2018 08:27	0000	0000	1	1	
COL-MWS-1005473	9/25/2018 08:32	0000	0000	1	1	
COL-MWS-1011581	9/25/2018 08:40	5100	0000	5	1	Hole Void Visible.
COL-MWS-1005893	9/25/2018 08:50	0000	0000	1	1	
COL-MWS-1005883	9/25/2018 08:53	0000	0000	1	1	
COL-MWS-1005884	9/25/2018 09:06	0000	0000	1	1	
COL-MWS-1005885	9/25/2018 09:10	0000	0000	1	1	
COL-MWS-1005886	9/25/2018 09:26	0000	0000	1	1	
COL-MWS-1005887	9/25/2018 11:22	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1005888	9/25/2018 11:26	0000	0000	1	1	
COL-MWS-1005889	9/25/2018 11:31	0000	0000	1	1	
COL-MWS-1005890	9/25/2018 11:33	0000	0000	1	1	
COL-MWS-1005891	9/25/2018 11:39	0000	0000	1	1	
COL-MWS-1005892	9/25/2018 11:42	0000	0000	1	1	
COL-MWS-1005894	9/25/2018 11:45	0000	0000	1	1	
COL-MWS-1005747	9/25/2018 11:58	0000	0000	1	1	
COL-MWS-1012109	9/25/2018 12:01	0000	0000	1	1	
COL-MWS-1005748	9/25/2018 12:07	0000	0000	1	1	
COL-MWS-1005749	9/25/2018 12:10	0000	0000	1	1	
COL-MWS-1005745	9/25/2018 12:14	0000	0000	1	1	
COL-MWS-1005760	9/25/2018 12:20	0000	0000	1	1	
COL-MWS-1005761	9/25/2018 12:24	0000	0000	1	1	
COL-MWS-1005762	9/25/2018 12:27	0000	0000	1	1	
COL-MWS-1005763	9/25/2018 12:31	0000	0000	1	1	
COL-MWS-1012110	9/25/2018 12:34	0000	0000	1	1	
COL-MWS-1005812	9/25/2018 12:41	0000	0000	1	1	
COL-MWS-1005811	9/25/2018 12:43	0000	0000	1	1	
COL-MWS-1005806	9/25/2018 13:03	0000	0000	1	1	
COL-MWS-1005808	9/25/2018 13:07	0000	0000	1	1	
COL-MWS-1005809	9/25/2018 13:10	0000	0000	1	1	
COL-MWS-1005807	9/25/2018 13:13	0000	0000	1	1	
COL-MWS-1005845	9/25/2018 13:17	0000	0000	1	1	
COL-MWS-1005846	9/25/2018 13:20	0000	0000	1	1	
COL-MWS-1005847	9/25/2018 13:24	0000	0000	1	1	
COL-MWS-1005875	9/25/2018 13:27	0000	0000	1	1	
COL-MWS-1005851	9/25/2018 13:31	0000	0000	1	1	
COL-MWS-1012127	9/25/2018 13:33	0000	0000	1	1	
COL-MWS-1005852	9/25/2018 13:38	0000	0000	1	1	
COL-MWS-1005876	9/25/2018 13:43	0000	0000	1	1	
COL-MWS-1005853	9/25/2018 13:47	0000	0000	1	1	
COL-MWS-1005877	9/25/2018 13:51	0000	0000	1	1	
COL-MWS-1005854	9/25/2018 13:54	0000	0000	1	1	
COL-MWS-1005878	9/25/2018 13:58	0000	0000	1	1	
COL-MWS-1012082	9/25/2018 14:18	0000	0000	1	1	
COL-MWS-1012092	9/25/2018 14:26	0000	0000	1	1	
COL-MWS-1011600	9/26/2018 07:40	0000	0000	1	1	
COL-MWS-1005791	9/26/2018 07:50	0000	0000	1	1	
COL-MWS-1005788	9/26/2018 08:03	0000	0000	1	1	
COL-MWS-1005789	9/26/2018 08:08	0000	0000	1	1	
COL-MWS-1005790	9/26/2018 08:10	0000	0000	1	1	
COL-MWS-1005471	9/26/2018 08:17	0000	0000	1	1	
COL-MWS-1011750	9/26/2018 08:21	0000	0000	1	1	
COL-MWS-1013963	9/26/2018 08:35	0000	0000	1	1	
COL-MWS-1011599	9/26/2018 08:40	3100	0000	3	1	Broken Channel.
COL-MWS-1005474	9/26/2018 08:49	0000	0000	1	1	
COL-MWS-1011752	9/26/2018 08:59	3100	0000	3	1	Hole on Bench.
COL-MWS-1011751	9/26/2018 09:08	0000	0000	1	1	
COL-MWS-1013964	9/26/2018 09:15	0000	0000	1	1	
COL-MWS-1011755	9/26/2018 09:23	0000	0000	1	1	
COL-MWS-1011754	9/26/2018 09:29	0000	0000	1	1	
COL-MWS-1011765	9/26/2018 09:47	0000	0000	1	1	
COL-MWS-1013968	9/26/2018 09:52	0000	0000	1	1	
COL-MWS-1006056	9/26/2018 09:57	0000	0000	1	1	
COL-MWS-1000961	9/26/2018 10:01	0000	0000	1	1	
COL-MWS-1000959	9/26/2018 10:08	0000	2100	1	2	Deposits attached other - pieces of brick on bench.
COL-MWS-1006017	9/26/2018 10:27	0000	0000	1	1	
COL-MWS-1006019	9/26/2018 10:39	0000	0000	1	1	
COL-MWS-1006018	9/26/2018 10:45	0000	0000	1	1	
COL-MWS-1006012	9/26/2018 10:55	0000	0000	1	1	
COL-MWS-1006015	9/26/2018 11:01	3100	0000	3	1	Hole on Bench.
COL-MWS-1006016	9/26/2018 11:07	5100	0000	5	1	Surface Reinforcement Corroded - channel.
COL-MWS-1012135	9/26/2018 11:19	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1006039	9/26/2018 11:24	0000	0000	1	1	
COL-MWS-1006038	9/26/2018 11:37	0000	0000	1	1	
COL-MWS-1014034	9/26/2018 11:43	0000	0000	1	1	
COL-MWS-1006033	9/26/2018 12:46	0000	0000	1	1	
COL-MWS-1006034	9/26/2018 13:01	0000	0000	1	1	
COL-MWS-1006030	9/26/2018 13:08	0000	0000	1	1	
COL-MWS-1006031	9/26/2018 13:14	0000	0000	1	1	
COL-MWS-1006032	9/26/2018 13:19	0000	0000	1	1	
COL-MWS-1006029	9/26/2018 13:22	0000	0000	1	1	
COL-MWS-1006028	9/26/2018 13:28	0000	0000	1	1	
COL-MWS-1005834	9/26/2018 13:55	0000	0000	1	1	
COL-MWS-1005835	9/26/2018 14:00	0000	0000	1	1	
COL-MWS-1005841	9/26/2018 14:05	0000	0000	1	1	
COL-MWS-1005842	9/26/2018 14:07	0000	0000	1	1	
COL-MWS-1005840	9/26/2018 14:10	0000	0000	1	1	
COL-MWS-1005838	9/26/2018 14:13	0000	0000	1	1	
COL-MWS-1005839	9/26/2018 14:15	0000	0000	1	1	
COL-MWS-1005837	9/26/2018 14:19	0000	0000	1	1	
COL-MWS-1005836	9/26/2018 14:22	0000	0000	1	1	
COL-MWS-1012126	9/26/2018 14:26	0000	0000	1	1	
COL-MWS-1012091	9/27/2018 07:18	0000	0000	1	1	
COL-MWS-1012095	9/27/2018 07:37	0000	0000	1	1	
COL-MWS-1005944	9/27/2018 08:08	0000	0000	1	1	
COL-MWS-1005943	9/27/2018 08:11	0000	0000	1	1	
COL-MWS-1005942	9/27/2018 08:14	0000	0000	1	1	
COL-MWS-1005941	9/27/2018 08:18	0000	0000	1	1	
COL-MWS-1014012	9/27/2018 08:34	0000	0000	1	1	
COL-MWS-1014017	9/27/2018 08:40	0000	0000	1	1	
COL-MWS-1014011	9/27/2018 08:47	0000	0000	1	1	
COL-MWS-1014026	9/27/2018 09:10	5100	0000	5	1	Surface Reinforcement Corroded - channel.
COL-MWS-1014022	9/27/2018 09:22	0000	0000	1	1	
COL-MWS-1014019	9/27/2018 09:35	0000	0000	1	1	
COL-MWS-1014020	9/27/2018 09:40	0000	0000	1	1	
COL-MWS-1000810	9/27/2018 10:04	0000	0000	1	1	
COL-MWS-1000811	9/27/2018 10:09	0000	0000	1	1	
COL-MWS-1000822	9/27/2018 10:13	0000	0000	1	1	
COL-MWS-1000812	9/27/2018 10:17	0000	0000	1	1	
COL-MWS-1000813	9/27/2018 10:22	0000	0000	1	1	
COL-MWS-1000814	9/27/2018 10:26	0000	0000	1	1	
COL-MWS-1009510	9/27/2018 10:35	0000	0000	1	1	
COL-MWS-1009509	9/27/2018 10:42	0000	0000	1	1	
COL-MWS-1006091	9/27/2018 10:44	0000	0000	1	1	
COL-MWS-1006092	9/27/2018 11:05	0000	0000	1	1	
COL-MWS-1006093	9/27/2018 11:13	0000	0000	1	1	
COL-MWS-1006090	9/27/2018 11:19	0000	0000	1	1	
COL-MWS-1001132	9/27/2018 11:24	0000	0000	1	1	
COL-MWS-1006121	9/27/2018 11:32	0000	0000	1	1	
COL-MWS-1001131	9/27/2018 11:37	0000	0000	1	1	
COL-MWS-1001142	9/27/2018 11:41	0000	0000	1	1	
COL-MWS-1001143	9/27/2018 11:46	0000	0000	1	1	
COL-MWS-1006089	9/27/2018 11:50	0000	0000	1	1	
COL-MWS-1006096	9/27/2018 11:58	0000	0000	1	1	
COL-MWS-1014277	9/27/2018 12:04	0000	0000	1	1	
COL-MWS-1006094	9/27/2018 12:12	0000	0000	1	1	
COL-MWS-1006104	9/27/2018 12:22	0000	0000	1	1	
COL-MWS-1006103	9/27/2018 12:32	0000	0000	1	1	
COL-MWS-1006102	9/27/2018 12:43	0000	0000	1	1	
COL-MWS-1012142	9/27/2018 12:48	0000	0000	1	1	
COL-MWS-1006099	9/27/2018 12:53	0000	2100	1	2	Deposits attached other - rocks and stick on bench.
COL-MWS-1006100	9/27/2018 12:57	0000	0000	1	1	
COL-MWS-1006101	9/27/2018 13:03	0000	0000	1	1	
COL-MWS-1006097	9/27/2018 13:09	0000	0000	1	1	
COL-MWS-1012143	9/27/2018 13:26	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1009454	9/27/2018 13:35	0000	0000	1	1	
COL-MWS-1012506	9/27/2018 13:41	0000	0000	1	1	
COL-MWS-1012145	9/27/2018 13:44	0000	0000	1	1	
COL-MWS-1006115	9/27/2018 13:49	0000	0000	1	1	
COL-MWS-1006116	9/27/2018 13:52	0000	0000	1	1	
COL-MWS-1006114	9/27/2018 13:56	0000	0000	1	1	
COL-MWS-1006113	9/27/2018 14:00	0000	0000	1	1	
COL-MWS-1006107	9/27/2018 14:06	0000	0000	1	1	
COL-MWS-1006108	9/27/2018 14:11	0000	0000	1	1	
COL-MWS-1012144	9/27/2018 14:17	0000	0000	1	1	
COL-MWS-1006111	9/27/2018 14:20	0000	0000	1	1	
COL-MWS-1006112	9/27/2018 14:23	0000	0000	1	1	
COL-MWS-1012130	9/28/2018 07:25	0000	0000	1	1	
COL-MWS-1006109	9/28/2018 07:31	0000	0000	1	1	
COL-MWS-1006110	9/28/2018 07:34	0000	0000	1	1	
COL-MWS-1001151	9/28/2018 07:58	0000	0000	1	1	
COL-MWS-1001150	9/28/2018 08:02	0000	0000	1	1	
COL-MWS-1001149	9/28/2018 08:08	0000	2100	1	2	Deposits settled gravel - gravel in the channel.
COL-MWS-1000083	9/28/2018 08:14	0000	0000	1	1	
COL-MWS-1000082	9/28/2018 08:21	0000	0000	1	1	
COL-MWS-1000086	9/28/2018 08:26	0000	0000	1	1	
COL-MWS-1000087	9/28/2018 08:31	0000	0000	1	1	
COL-MWS-1000085	9/28/2018 08:35	0000	0000	1	1	
COL-MWS-1000084	9/28/2018 08:38	0000	2100	1	2	Obstacle other - possible concrete preventing flow.
COL-MWS-1001147	9/28/2018 08:45	0000	0000	1	1	
COL-MWS-1009493	9/28/2018 09:53	0000	0000	1	1	
COL-MWS-1009494	9/28/2018 09:59	0000	0000	1	1	
COL-MWS-1005146	9/28/2018 10:04	0000	0000	1	1	
COL-MWS-1009489	9/28/2018 10:09	0000	0000	1	1	
COL-MWS-1009490	9/28/2018 10:14	0000	0000	1	1	
COL-MWS-1009491	9/28/2018 10:18	0000	0000	1	1	
COL-MWS-1005145	9/28/2018 10:26	0000	0000	1	1	
COL-MWS-1012514	9/28/2018 10:32	0000	0000	1	1	
COL-MWS-1009496	9/28/2018 10:36	0000	0000	1	1	
COL-MWS-1009495	9/28/2018 10:41	0000	0000	1	1	
COL-MWS-1012515	9/28/2018 10:44	0000	0000	1	1	
COL-MWS-1009330	9/28/2018 10:52	0000	0000	1	1	
COL-MWS-1009331	9/28/2018 10:58	0000	0000	1	1	
COL-MWS-1005122	9/28/2018 11:00	0000	0000	1	1	
COL-MWS-1005140	9/28/2018 11:08	0000	0000	1	1	
COL-MWS-1006003	9/28/2018 11:43	0000	0000	1	1	
COL-MWS-1006002	9/28/2018 11:49	0000	0000	1	1	
COL-MWS-1001221	9/28/2018 12:03	0000	0000	1	1	
COL-MWS-1005999	9/28/2018 12:08	0000	0000	1	1	
COL-MWS-1006000	9/28/2018 12:14	0000	0000	1	1	
COL-MWS-1005990	9/28/2018 12:27	0000	0000	1	1	
COL-MWS-1005989	9/28/2018 12:34	0000	0000	1	1	
COL-MWS-1005988	9/28/2018 12:40	0000	0000	1	1	
COL-MWS-1012131	9/28/2018 12:45	0000	5100	1	5	Deposits settled gravel - channel is debris in it, covering over 50% of pipe.
COL-MWS-1015848	9/28/2018 13:37	0000	0000	1	1	
COL-MWS-1015557	9/28/2018 13:46	0000	4100	1	4	Deposits attached ragging - Ball of rags.
COL-MWS-1014333	9/28/2018 14:09	0000	0000	1	1	
COL-MWS-1014334	9/28/2018 14:15	0000	0000	1	1	
COL-MWS-1014332	9/28/2018 14:21	0000	0000	1	1	
COL-MWS-1014766	9/28/2018 14:24	0000	0000	1	1	
COL-MWS-1009586	9/28/2018 14:32	0000	0000	1	1	
COL-MWS-1009585	9/28/2018 14:36	0000	0000	1	1	
COL-MWS-1020036	10/1/2018 07:33	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1020040	10/1/2018 07:43	0000	0000	1	1	
COL-MWS-1012590	10/1/2018 07:51	0000	0000	1	1	
COL-MWS-1012591	10/1/2018 07:55	0000	0000	1	1	
COL-MWS-1014068	10/1/2018 08:10	0000	0000	1	1	
COL-MWS-1012592	10/1/2018 08:18	0000	0000	1	1	
COL-MWS-1014303	10/1/2018 08:25	0000	0000	1	1	
COL-MWS-1015846	10/1/2018 08:52	0000	0000	1	1	
COL-MWS-1015843	10/1/2018 09:04	0000	0000	1	1	
COL-MWS-1015845	10/1/2018 09:09	0000	0000	1	1	
COL-MWS-1015556	10/1/2018 09:34	0000	0000	1	1	
COL-MWS-1015574	10/1/2018 09:45	0000	0000	1	1	
COL-MWS-1015572	10/1/2018 10:07	0000	0000	1	1	
COL-MWS-1014283	10/1/2018 10:50	0000	5121	1	5	Deposits attached other - Medium debris in the channel. Obstacle brick - brick from frame on bench.
COL-MWS-1014824	10/1/2018 11:01	0000	0000	1	1	
COL-MWS-1014159	10/1/2018 11:14	0000	0000	1	1	
COL-MWS-1002040	10/1/2018 11:27	0000	0000	1	1	
COL-MWS-1002039	10/1/2018 11:32	0000	0000	1	1	
COL-MWS-1002045	10/1/2018 11:43	0000	0000	1	1	
COL-MWS-1014286	10/1/2018 11:52	0000	0000	1	1	
COL-MWS-1014821	10/1/2018 11:56	0000	0000	1	1	
COL-MWS-1014820	10/1/2018 12:00	0000	0000	1	1	
COL-MWS-1006450	10/1/2018 12:24	0000	0000	1	1	
COL-MWS-1006451	10/1/2018 12:58	0000	0000	1	1	
COL-MWS-1006452	10/1/2018 13:02	0000	0000	1	1	
COL-MWS-1006460	10/1/2018 13:08	0000	0000	1	1	
COL-MWS-1006449	10/1/2018 13:15	0000	0000	1	1	
COL-MWS-1006448	10/1/2018 13:19	0000	0000	1	1	
COL-MWS-1012158	10/1/2018 13:23	0000	0000	1	1	
COL-MWS-1006617	10/1/2018 13:26	0000	0000	1	1	
COL-MWS-1006616	10/1/2018 13:29	0000	0000	1	1	
COL-MWS-1006615	10/1/2018 13:32	0000	0000	1	1	
COL-MWS-1006613	10/1/2018 13:35	0000	0000	1	1	
COL-MWS-1006614	10/1/2018 13:39	0000	0000	1	1	
COL-MWS-1006610	10/1/2018 13:42	0000	0000	1	1	
COL-MWS-1006612	10/1/2018 13:46	0000	0000	1	1	
COL-MWS-1006609	10/1/2018 13:50	0000	5100	1	5	Deposits settled gravel - heavy debris in the channel, covering over 90% of channel.
COL-MWS-1001907	10/1/2018 13:55	0000	2100	1	2	Deposits settled other - light debris in the center of channel.
COL-MWS-1001906	10/1/2018 13:58	0000	0000	1	1	
COL-MWS-1001909	10/1/2018 14:03	0000	0000	1	1	
COL-MWS-1001905	10/1/2018 14:10	3100	0000	3	1	Hole in middle of channel.
COL-MWS-1001890	10/1/2018 14:14	0000	0000	1	1	
COL-MWS-1001892	10/1/2018 14:18	0000	0000	1	1	
COL-MWS-1001894	10/1/2018 14:23	0000	0000	1	1	
COL-MWS-1001898	10/1/2018 14:27	0000	0000	1	1	
COL-MWS-1001897	10/1/2018 14:32	0000	0000	1	1	
COL-MWS-1001903	10/1/2018 14:36	0000	0000	1	1	
COL-MWS-1001901	10/1/2018 14:38	0000	0000	1	1	
COL-MWS-1012103	10/2/2018 07:28	0000	0000	1	1	
COL-MWS-1005705	10/2/2018 07:41	0000	0000	1	1	
COL-MWS-1005704	10/2/2018 07:45	0000	0000	1	1	
COL-MWS-1005706	10/2/2018 07:51	0000	0000	1	1	
COL-MWS-1005707	10/2/2018 07:57	0000	0000	1	1	
COL-MWS-1005708	10/2/2018 08:00	0000	0000	1	1	
COL-MWS-1005702	10/2/2018 08:09	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1005844	10/2/2018 08:22	0000	0000	1	1	
COL-MWS-1005843	10/2/2018 08:28	0000	0000	1	1	
COL-MWS-1014030	10/2/2018 08:45	0000	0000	1	1	
COL-MWS-1013962	10/2/2018 09:00	0000	0000	1	1	
COL-MWS-1014035	10/2/2018 09:29	0000	0000	1	1	
COL-MWS-1006023	10/2/2018 09:34	1100	0000	1	1	Crack in channel.
COL-MWS-1012137	10/2/2018 09:47	0000	0000	1	1	
COL-MWS-1014036	10/2/2018 09:53	2100	0000	2	1	Fracture in Cone Interior/Crack at Brick Frame
COL-MWS-1006026	10/2/2018 10:02	0000	0000	1	1	
COL-MWS-1012133	10/2/2018 10:06	0000	0000	1	1	
COL-MWS-2002230	10/3/2018 07:41	0000	0000	1	1	
COL-MWS-2002236	10/3/2018 07:53	0000	0000	1	1	
COL-MWS-2002225	10/3/2018 08:10	0000	0000	1	1	
COL-MWS-2002229	10/3/2018 08:16	0000	0000	1	1	
COL-MWS-2002235	10/3/2018 08:22	0000	0000	1	1	
COL-MWS-2002234	10/3/2018 08:26	0000	0000	1	1	
COL-MWS-2002271	10/3/2018 08:32	0000	0000	1	1	
COL-MWS-2002273	10/3/2018 08:37	0000	0000	1	1	
COL-MWS-2002270	10/3/2018 08:42	0000	0000	1	1	
COL-MWS-2002272	10/3/2018 08:47	0000	0000	1	1	
COL-MWS-2002259	10/3/2018 08:54	0000	0000	1	1	
COL-MWS-2002257	10/3/2018 09:06	0000	0000	1	1	
COL-MWS-2002256	10/3/2018 09:12	0000	0000	1	1	
COL-MWS-2002249	10/3/2018 09:23	0000	0000	1	1	
COL-MWS-2002248	10/3/2018 09:29	0000	0000	1	1	
COL-MWS-2002247	10/3/2018 09:34	0000	0000	1	1	
COL-MWS-2002246	10/3/2018 09:37	0000	0000	1	1	
COL-MWS-2002245	10/3/2018 09:41	0000	0000	1	1	
COL-MWS-2002253	10/3/2018 09:49	0000	0000	1	1	
COL-MWS-2002250	10/3/2018 09:54	0000	0000	1	1	
COL-MWS-2002254	10/3/2018 09:59	0000	0000	1	1	
COL-MWS-2002258	10/3/2018 10:05	0000	0000	1	1	
COL-MWS-2014553	10/3/2018 10:12	0000	0000	1	1	
COL-MWS-2014559	10/3/2018 10:22	0000	0000	1	1	
COL-MWS-2006754	10/3/2018 10:30	0000	0000	1	1	
COL-MWS-2006755	10/3/2018 10:34	0000	0000	1	1	
COL-MWS-2006752	10/3/2018 10:44	0000	0000	1	1	
COL-MWS-2014576	10/3/2018 11:05	0000	0000	1	1	
COL-MWS-2010124	10/3/2018 11:12	0000	1100	1	1	Fine roots at joint - roots on chimney.
COL-MWS-2010123	10/3/2018 11:21	0000	0000	1	1	
COL-MWS-2012846	10/3/2018 11:25	0000	0000	1	1	
COL-MWS-2010126	10/3/2018 11:41	0000	0000	1	1	
COL-MWS-2010125	10/3/2018 11:46	0000	0000	1	1	
COL-MWS-2010127	10/3/2018 11:51	0000	0000	1	1	
COL-MWS-2010148	10/3/2018 12:07	0000	0000	1	1	
COL-MWS-2010150	10/3/2018 12:13	0000	0000	1	1	
COL-MWS-2010151	10/3/2018 12:17	0000	0000	1	1	
COL-MWS-2010152	10/3/2018 12:21	0000	0000	1	1	
COL-MWS-2010153	10/3/2018 12:24	0000	0000	1	1	
COL-MWS-2010154	10/3/2018 12:28	0000	0000	1	1	
COL-MWS-2010145	10/3/2018 12:32	0000	0000	1	1	
COL-MWS-2010144	10/3/2018 12:37	0000	0000	1	1	
COL-MWS-2010139	10/3/2018 12:40	0000	0000	1	1	
COL-MWS-2010138	10/3/2018 12:43	0000	0000	1	1	
COL-MWS-2010149	10/3/2018 12:49	0000	0000	1	1	
COL-MWS-2000332	10/3/2018 12:52	0000	0000	1	1	
COL-MWS-2000331	10/3/2018 12:56	0000	0000	1	1	
COL-MWS-2000330	10/3/2018 12:59	0000	0000	1	1	
COL-MWS-2000340	10/3/2018 13:02	0000	0000	1	1	
COL-MWS-2000338	10/3/2018 13:08	0000	0000	1	1	
COL-MWS-2000339	10/3/2018 13:12	0000	0000	1	1	
COL-MWS-2010146	10/3/2018 13:16	0000	0000	1	1	
COL-MWS-2010147	10/3/2018 13:23	0000	0000	1	1	
COL-MWS-2003045	10/4/2018 07:44	0000	0000	1	1	
COL-MWS-2003044	10/4/2018 07:54	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2003055	10/4/2018 07:58	0000	0000	1	1	
COL-MWS-2003056	10/4/2018 08:02	0000	0000	1	1	
COL-MWS-2003053	10/4/2018 08:05	0000	0000	1	1	
COL-MWS-2003054	10/4/2018 08:11	0000	0000	1	1	
COL-MWS-2003049	10/4/2018 08:15	0000	0000	1	1	
COL-MWS-2003048	10/4/2018 08:19	0000	0000	1	1	
COL-MWS-2003047	10/4/2018 08:24	0000	0000	1	1	
COL-MWS-2003046	10/4/2018 08:28	0000	0000	1	1	
COL-MWS-2003051	10/4/2018 08:33	0000	0000	1	1	
COL-MWS-2003050	10/4/2018 08:37	0000	2100	1	2	Deposits settled other - light debris in channel.
COL-MWS-2003052	10/4/2018 08:42	0000	0000	1	1	
COL-MWS-2000335	10/4/2018 08:49	0000	0000	1	1	
COL-MWS-2000336	10/4/2018 08:53	0000	0000	1	1	
COL-MWS-2000337	10/4/2018 08:57	0000	0000	1	1	
COL-MWS-2003042	10/4/2018 09:00	0000	0000	1	1	
COL-MWS-2007334	10/4/2018 09:05	0000	2100	1	2	Deposits ingressed other - small rocks on bench.
COL-MWS-2003120	10/4/2018 09:10	0000	0000	1	1	
COL-MWS-2003119	10/4/2018 09:13	0000	0000	1	1	
COL-MWS-2003118	10/4/2018 09:18	0000	2100	1	2	Deposits attached other - small rocks on bench.
COL-MWS-2003117	10/4/2018 09:25	0000	0000	1	1	
COL-MWS-2003116	10/4/2018 09:28	0000	0000	1	1	
COL-MWS-2003115	10/4/2018 09:32	0000	0000	1	1	
COL-MWS-2010140	10/4/2018 09:52	0000	0000	1	1	
COL-MWS-2010141	10/4/2018 10:06	0000	0000	1	1	
COL-MWS-2000214	10/4/2018 10:43	0000	0000	1	1	
COL-MWS-2000215	10/4/2018 10:46	0000	0000	1	1	
COL-MWS-2002152	10/4/2018 10:55	0000	0000	1	1	
COL-MWS-2002153	10/4/2018 11:01	0000	0000	1	1	
COL-MWS-2002138	10/4/2018 11:05	0000	0000	1	1	
COL-MWS-2002137	10/4/2018 11:14	0000	0000	1	1	
COL-MWS-2002134	10/4/2018 11:19	0000	0000	1	1	
COL-MWS-2002145	10/4/2018 11:24	0000	0000	1	1	
COL-MWS-2002146	10/4/2018 11:30	0000	0000	1	1	
COL-MWS-2002154	10/4/2018 11:34	0000	0000	1	1	
COL-MWS-2002149	10/4/2018 11:37	0000	0000	1	1	
COL-MWS-2002156	10/4/2018 11:42	0000	0000	1	1	
COL-MWS-2002204	10/4/2018 11:48	0000	0000	1	1	
COL-MWS-2002205	10/4/2018 11:51	0000	0000	1	1	
COL-MWS-2002157	10/4/2018 11:54	0000	0000	1	1	
COL-MWS-2002206	10/4/2018 12:00	0000	0000	1	1	
COL-MWS-2002161	10/4/2018 12:06	0000	0000	1	1	
COL-MWS-2002162	10/4/2018 12:12	0000	0000	1	1	
COL-MWS-2002163	10/4/2018 12:17	0000	0000	1	1	
COL-MWS-2002165	10/4/2018 12:22	0000	0000	1	1	
COL-MWS-2002164	10/4/2018 12:25	0000	0000	1	1	
COL-MWS-2002167	10/4/2018 12:27	0000	0000	1	1	
COL-MWS-2002168	10/4/2018 12:31	0000	0000	1	1	
COL-MWS-2002169	10/4/2018 12:36	0000	0000	1	1	
COL-MWS-2002170	10/4/2018 12:40	0000	0000	1	1	
COL-MWS-2002171	10/4/2018 12:44	0000	0000	1	1	
COL-MWS-2002166	10/4/2018 12:50	0000	0000	1	1	
COL-MWS-2002183	10/4/2018 12:55	0000	0000	1	1	
COL-MWS-2002182	10/4/2018 13:01	0000	0000	1	1	
COL-MWS-2002181	10/4/2018 13:04	0000	0000	1	1	
COL-MWS-2012831	10/5/2018 08:29	0000	0000	1	1	
COL-MWS-2010173	10/5/2018 08:41	0000	0000	1	1	
COL-MWS-2010176	10/5/2018 08:45	0000	0000	1	1	
COL-MWS-2010175	10/5/2018 08:50	0000	0000	1	1	
COL-MWS-2010174	10/5/2018 08:54	0000	0000	1	1	
COL-MWS-2010172	10/5/2018 09:02	0000	0000	1	1	
COL-MWS-2010132	10/5/2018 09:08	0000	0000	1	1	
COL-MWS-2010133	10/5/2018 09:10	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2010134	10/5/2018 09:16	0000	0000	1	1	
COL-MWS-2010136	10/5/2018 09:20	0000	0000	1	1	
COL-MWS-2010135	10/5/2018 09:28	0000	0000	1	1	
COL-MWS-2012847	10/5/2018 09:33	0000	0000	1	1	
COL-MWS-2014205	10/5/2018 09:39	0000	0000	1	1	
COL-MWS-2014204	10/5/2018 09:43	0000	0000	1	1	
COL-MWS-2014203	10/5/2018 09:47	0000	0000	1	1	
COL-MWS-2014202	10/5/2018 09:54	0000	0000	1	1	
COL-MWS-2014207	10/5/2018 09:58	0000	0000	1	1	
COL-MWS-2015035	10/5/2018 10:01	0000	2100	1	2	Deposits attached ragging - rags in the channel.
COL-MWS-2015036	10/5/2018 10:08	0000	0000	1	1	
COL-MWS-2002175	10/5/2018 10:15	0000	0000	1	1	
COL-MWS-2002176	10/5/2018 10:19	0000	0000	1	1	
COL-MWS-2002177	10/5/2018 10:24	0000	0000	1	1	
COL-MWS-2002178	10/5/2018 10:34	0000	0000	1	1	
COL-MWS-2002179	10/5/2018 10:38	0000	0000	1	1	
COL-MWS-2002214	10/5/2018 11:42	0000	0000	1	1	
COL-MWS-2002216	10/5/2018 11:48	0000	0000	1	1	
COL-MWS-2002202	10/5/2018 11:53	0000	0000	1	1	
COL-MWS-2002201	10/5/2018 12:00	0000	3100	1	3	Deposits settled other - gravel in the channel.
COL-MWS-2002297	10/5/2018 12:07	0000	2100	1	2	Obstacles other - concrete in the channel.
COL-MWS-2002198	10/5/2018 12:17	0000	0000	1	1	
COL-MWS-2002199	10/5/2018 12:35	0000	0000	1	1	
COL-MWS-2002213	10/5/2018 12:41	0000	0000	1	1	
COL-MWS-2006773	10/5/2018 12:50	0000	0000	1	1	
COL-MWS-2003080	10/5/2018 13:01	0000	0000	1	1	
COL-MWS-2003079	10/5/2018 13:06	0000	0000	1	1	
COL-MWS-2003078	10/5/2018 13:09	0000	0000	1	1	
COL-MWS-2003077	10/5/2018 13:12	0000	0000	1	1	
COL-MWS-2003076	10/5/2018 13:15	0000	0000	1	1	
COL-MWS-2003075	10/5/2018 13:17	0000	0000	1	1	
COL-MWS-2007332	10/5/2018 13:21	0000	0000	1	1	
COL-MWS-2003096	10/5/2018 13:29	0000	0000	1	1	
COL-MWS-2003090	10/5/2018 13:35	0000	0000	1	1	
COL-MWS-2003091	10/5/2018 13:41	0000	0000	1	1	
COL-MWS-2003092	10/5/2018 13:44	0000	0000	1	1	
COL-MWS-2003093	10/5/2018 13:48	0000	0000	1	1	
COL-MWS-2003094	10/5/2018 13:52	0000	0000	1	1	
COL-MWS-2010772	10/5/2018 13:57	0000	0000	1	1	
COL-MWS-2010771	10/5/2018 14:02	0000	0000	1	1	
COL-MWS-2020081	10/5/2018 14:04	0000	2100	1	2	Deposits attached ragging - rag build up in the channel.
COL-MWS-2010770	10/5/2018 14:11	0000	0000	1	1	
COL-MWS-2003060	10/8/2018 07:37	0000	0000	1	1	
COL-MWS-2003067	10/8/2018 07:43	0000	0000	1	1	
COL-MWS-2003058	10/8/2018 07:49	0000	0000	1	1	
COL-MWS-2003082	10/8/2018 07:55	0000	0000	1	1	
COL-MWS-2003081	10/8/2018 08:00	0000	0000	1	1	
COL-MWS-2007333	10/8/2018 08:07	0000	0000	1	1	
COL-MWS-2003084	10/8/2018 08:11	0000	0000	1	1	
COL-MWS-2003083	10/8/2018 08:16	0000	0000	1	1	
COL-MWS-2003108	10/8/2018 08:20	0000	0000	1	1	
COL-MWS-2003068	10/8/2018 08:27	0000	0000	1	1	
COL-MWS-2003069	10/8/2018 08:31	0000	0000	1	1	
COL-MWS-2003070	10/8/2018 08:34	0000	0000	1	1	
COL-MWS-2000324	10/8/2018 08:39	0000	0000	1	1	
COL-MWS-2000325	10/8/2018 08:43	0000	0000	1	1	
COL-MWS-2000327	10/8/2018 08:46	0000	0000	1	1	
COL-MWS-2000326	10/8/2018 08:50	0000	0000	1	1	
COL-MWS-2000328	10/8/2018 09:00	0000	0000	1	1	
COL-MWS-2000329	10/8/2018 09:04	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2015059	10/8/2018 09:13	0000	0000	1	1	
COL-MWS-2015049	10/8/2018 09:24	0000	0000	1	1	
COL-MWS-2015047	10/8/2018 09:29	0000	0000	1	1	
COL-MWS-2015048	10/8/2018 09:33	0000	0000	1	1	
COL-MWS-2002998	10/8/2018 09:37	0000	0000	1	1	
COL-MWS-2002972	10/8/2018 09:43	0000	0000	1	1	
COL-MWS-2002999	10/8/2018 09:47	0000	0000	1	1	
COL-MWS-2015050	10/8/2018 09:52	0000	0000	1	1	
COL-MWS-2015051	10/8/2018 09:55	0000	0000	1	1	
COL-MWS-2015045	10/8/2018 10:00	0000	0000	1	1	
COL-MWS-2015040	10/8/2018 10:05	0000	0000	1	1	
COL-MWS-2002982	10/8/2018 10:07	0000	0000	1	1	
COL-MWS-2015044	10/8/2018 10:17	0000	0000	1	1	
COL-MWS-2015042	10/8/2018 10:21	0000	0000	1	1	
COL-MWS-2015043	10/8/2018 10:34	0000	0000	1	1	
COL-MWS-2000323	10/8/2018 10:46	0000	0000	1	1	
COL-MWS-2003059	10/8/2018 10:51	0000	0000	1	1	
COL-MWS-2010773	10/8/2018 10:58	0000	0000	1	1	
COL-MWS-2003014	10/8/2018 11:06	0000	0000	1	1	
COL-MWS-2003013	10/8/2018 11:10	0000	0000	1	1	
COL-MWS-2003012	10/8/2018 11:13	0000	0000	1	1	
COL-MWS-2003018	10/8/2018 11:20	0000	0000	1	1	
COL-MWS-2010769	10/8/2018 11:29	0000	4100	1	4	Obstacle construction dbris - metal and concrete on bench.
COL-MWS-2013281	10/8/2018 11:35	0000	5100	1	5	Deposits settled gravel - a possible abandoned line with heavy debris, covering 95% of pipe.
COL-MWS-2010768	10/8/2018 11:41	0000	0000	1	1	
COL-MWS-2003085	10/8/2018 11:48	0000	0000	1	1	
COL-MWS-2003086	10/8/2018 11:52	0000	0000	1	1	
COL-MWS-2011619	10/8/2018 12:21	0000	0000	1	1	
COL-MWS-2020048	10/8/2018 12:26	0000	0000	1	1	
COL-MWS-2011618	10/8/2018 12:30	0000	0000	1	1	
COL-MWS-2011620	10/8/2018 13:11	0000	1100	1	1	Fine roots at joint - wall interior joint.
COL-MWS-2002279	10/8/2018 13:24	0000	0000	1	1	
COL-MWS-2014575	10/8/2018 13:31	0000	0000	1	1	
COL-MWS-2014574	10/8/2018 13:35	0000	0000	1	1	
COL-MWS-2014573	10/8/2018 13:39	0000	0000	1	1	
COL-MWS-2014572	10/8/2018 13:42	0000	0000	1	1	
COL-MWS-2002280	10/8/2018 13:56	0000	0000	1	1	
COL-MWS-2007345	10/9/2018 08:07	0000	0000	1	1	
COL-MWS-2007346	10/9/2018 08:19	0000	0000	1	1	
COL-MWS-2007344	10/9/2018 08:24	0000	0000	1	1	
COL-MWS-2007343	10/9/2018 08:27	0000	0000	1	1	
COL-MWS-2007342	10/9/2018 08:30	0000	0000	1	1	
COL-MWS-2007341	10/9/2018 08:33	0000	0000	1	1	
COL-MWS-2007335	10/9/2018 08:36	0000	0000	1	1	
COL-MWS-2007336	10/9/2018 08:40	0000	0000	1	1	
COL-MWS-2007337	10/9/2018 08:44	0000	0000	1	1	
COL-MWS-2003208	10/9/2018 08:47	0000	0000	1	1	
COL-MWS-2003206	10/9/2018 08:51	0000	0000	1	1	
COL-MWS-2003207	10/9/2018 08:55	0000	0000	1	1	
COL-MWS-2003205	10/9/2018 08:58	0000	0000	1	1	
COL-MWS-2003204	10/9/2018 09:02	0000	0000	1	1	
COL-MWS-2003195	10/9/2018 09:05	0000	0000	1	1	
COL-MWS-2003196	10/9/2018 09:09	0000	0000	1	1	
COL-MWS-2003197	10/9/2018 09:12	0000	0000	1	1	
COL-MWS-2003198	10/9/2018 09:17	0000	0000	1	1	
COL-MWS-2003194	10/9/2018 09:21	0000	0000	1	1	
COL-MWS-2003193	10/9/2018 09:26	0000	0000	1	1	
COL-MWS-2003187	10/9/2018 09:29	0000	0000	1	1	
COL-MWS-2003190	10/9/2018 09:33	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2003192	10/9/2018 09:38	0000	0000	1	1	
COL-MWS-2003191	10/9/2018 09:45	0000	0000	1	1	
COL-MWS-2003189	10/9/2018 09:48	0000	2100	1	2	Deposits settled gravel - light gravel in the channel.
COL-MWS-2003202	10/9/2018 09:52	0000	0000	1	1	
COL-MWS-2003201	10/9/2018 09:55	0000	0000	1	1	
COL-MWS-2003203	10/9/2018 10:01	0000	0000	1	1	
COL-MWS-2003188	10/9/2018 10:07	0000	0000	1	1	
COL-MWS-2008772	10/9/2018 10:10	0000	2100	1	2	Deposits attached other - possible grease.
COL-MWS-2008769	10/9/2018 10:16	0000	0000	1	1	
COL-MWS-2008771	10/9/2018 10:21	0000	0000	1	1	
COL-MWS-2008768	10/9/2018 10:26	0000	0000	1	1	
COL-MWS-2008767	10/9/2018 10:30	0000	0000	1	1	
COL-MWS-2008766	10/9/2018 10:33	0000	0000	1	1	
COL-MWS-2008762	10/9/2018 10:38	0000	0000	1	1	
COL-MWS-2008761	10/9/2018 10:41	0000	0000	1	1	
COL-MWS-2008760	10/9/2018 10:46	0000	0000	1	1	
COL-MWS-2008759	10/9/2018 10:48	0000	0000	1	1	
COL-MWS-2008758	10/9/2018 10:53	0000	0000	1	1	
COL-MWS-2008757	10/9/2018 10:54	0000	0000	1	1	
COL-MWS-2008756	10/9/2018 10:59	0000	0000	1	1	
COL-MWS-2008755	10/9/2018 11:03	0000	0000	1	1	
COL-MWS-2008765	10/9/2018 11:07	0000	0000	1	1	
COL-MWS-2003181	10/9/2018 11:15	0000	0000	1	1	
COL-MWS-2003182	10/9/2018 11:21	0000	3100	1	3	Deposits settled gravel - settled gravel on bottom of channel.
COL-MWS-2003183	10/9/2018 11:27	0000	0000	1	1	
COL-MWS-2003184	10/9/2018 11:30	0000	0000	1	1	
COL-MWS-2003185	10/9/2018 11:33	0000	0000	1	1	
COL-MWS-2003186	10/9/2018 11:37	0000	0000	1	1	
COL-MWS-2003200	10/9/2018 11:41	0000	0000	1	1	
COL-MWS-2003199	10/9/2018 11:45	0000	0000	1	1	
COL-MWS-2007340	10/9/2018 12:30	0000	0000	1	1	
COL-MWS-2003174	10/9/2018 12:35	0000	0000	1	1	
COL-MWS-2007352	10/9/2018 12:40	0000	0000	1	1	
COL-MWS-2007351	10/9/2018 12:49	0000	0000	1	1	
COL-MWS-2007350	10/9/2018 12:53	0000	0000	1	1	
COL-MWS-2007377	10/9/2018 12:59	0000	0000	1	1	
COL-MWS-2007378	10/9/2018 13:05	0000	0000	1	1	
COL-MWS-2007376	10/9/2018 13:12	0000	0000	1	1	
COL-MWS-2007348	10/9/2018 13:18	0000	0000	1	1	
COL-MWS-2007347	10/9/2018 13:24	0000	0000	1	1	
COL-MWS-2007339	10/9/2018 13:32	0000	0000	1	1	
COL-MWS-2007338	10/9/2018 13:37	0000	0000	1	1	
COL-MWS-2008698	10/9/2018 13:50	0000	0000	1	1	
COL-MWS-2008697	10/9/2018 13:55	0000	4100	1	4	Deposits attached other - rags and light debris in the 12 o'clock pipe connection.
COL-MWS-2012361	10/9/2018 14:08	0000	0000	1	1	
COL-MWS-2012362	10/10/2018 07:30	3100	0000	3	1	Multiple Cracks on Bench
COL-MWS-2012363	10/10/2018 07:42	0000	0000	1	1	
COL-MWS-2012364	10/10/2018 07:47	0000	0000	1	1	
COL-MWS-2008741	10/10/2018 08:07	0000	0000	1	1	
COL-MWS-2008740	10/10/2018 08:16	0000	0000	1	1	
COL-MWS-2009091	10/10/2018 08:21	0000	0000	1	1	
COL-MWS-2009090	10/10/2018 08:28	0000	0000	1	1	
COL-MWS-2009089	10/10/2018 08:32	0000	0000	1	1	
COL-MWS-2009092	10/10/2018 08:49	0000	3100	1	3	Deposits attached other - debris in the channel.

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2012387	10/10/2018 08:56	0000	0000	1	1	
COL-MWS-2012388	10/10/2018 09:04	0000	0000	1	1	
COL-MWS-2012389	10/10/2018 09:13	0000	0000	1	1	
COL-MWS-2009080	10/10/2018 09:21	5100	0000	5	1	Broken Frame
COL-MWS-2012371	10/10/2018 09:29	0000	2100	1	2	Deposits settled gravel - soil on bench.
COL-MWS-2009083	10/10/2018 09:37	0000	0000	1	1	
COL-MWS-2009082	10/10/2018 09:42	0000	0000	1	1	
COL-MWS-2009086	10/10/2018 09:49	0000	0000	1	1	
COL-MWS-2009085	10/10/2018 09:54	0000	2100	1	2	Deposits settled gravel - soil around the bench. Chimney interior - possible missing adjustment grade ring.
COL-MWS-2009084	10/10/2018 10:05	0000	0000	1	1	
COL-MWS-2009097	10/10/2018 10:14	0000	0000	1	1	
COL-MWS-2009098	10/10/2018 10:16	0000	0000	1	1	
COL-MWS-2009099	10/10/2018 10:22	0000	0000	1	1	
COL-MWS-2009100	10/10/2018 10:30	0000	0000	1	1	
COL-MWS-2009079	10/10/2018 10:52	0000	0000	1	1	
COL-MWS-2014619	10/10/2018 10:58	0000	0000	1	1	
COL-MWS-2015256	10/10/2018 11:11	0000	2100	1	2	Deposits settled other - light debris.
COL-MWS-2015257	10/10/2018 11:18	0000	0000	1	1	
COL-MWS-2015255	10/10/2018 11:25	0000	2100	1	2	Deposits attached grease - grease on channel.
COL-MWS-2015254	10/10/2018 11:30	0000	2100	1	2	Deposits attached grease - grease on channel.
COL-MWS-2012401	10/10/2018 11:38	0000	0000	1	1	
COL-MWS-2012398	10/10/2018 11:46	0000	0000	1	1	
COL-MWS-2012399	10/10/2018 11:50	0000	0000	1	1	
COL-MWS-2012400	10/10/2018 11:54	0000	0000	1	1	
COL-MWS-2012397	10/10/2018 12:00	0000	3100	1	3	Deposits attached other - light debris in channel.
COL-MWS-2012402	10/10/2018 12:06	0000	0000	1	1	
COL-MWS-2012403	10/10/2018 12:11	0000	0000	1	1	
COL-MWS-2012404	10/10/2018 12:15	0000	0000	1	1	
COL-MWS-2012407	10/10/2018 12:21	0000	2100	1	2	Deposits settled gravel - settled gravel in channel.
COL-MWS-2012406	10/10/2018 12:27	0000	0000	1	1	
COL-MWS-2012408	10/10/2018 12:29	0000	0000	1	1	
COL-MWS-2012409	10/10/2018 12:38	0000	0000	1	1	
COL-MWS-2012342	10/10/2018 13:42	0000	2100	1	2	Deposits attached other - light debris in channel.
COL-MWS-2012343	10/10/2018 13:50	0000	0000	1	1	
COL-MWS-2009104	10/10/2018 14:01	0000	0000	1	1	
COL-MWS-2009105	10/10/2018 14:14	0000	0000	1	1	
COL-MWS-2009103	10/10/2018 14:22	0000	0000	1	1	
COL-MWS-2009102	10/10/2018 14:25	0000	0000	1	1	
COL-MWS-2010158	10/11/2018 07:53	1100	0000	1	1	Crack in channel.
COL-MWS-2012843	10/11/2018 08:03	0000	3100	1	3	Deposits settled gravel - settled gravel in the channel.
COL-MWS-2014585	10/11/2018 08:15	0000	0000	1	1	
COL-MWS-2014583	10/11/2018 08:33	0000	0000	1	1	
COL-MWS-2014599	10/11/2018 08:45	0000	0000	1	1	
COL-MWS-2014598	10/11/2018 08:51	0000	0000	1	1	
COL-MWS-2014597	10/11/2018 08:58	0000	0000	1	1	
COL-MWS-2014596	10/11/2018 09:06	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2014594	10/11/2018 09:20	0000	0000	1	1	
COL-MWS-2014601	10/11/2018 09:31	0000	0000	1	1	
COL-MWS-2014600	10/11/2018 09:39	0000	0000	1	1	
COL-MWS-2012242	10/11/2018 09:59	0000	0000	1	1	
COL-MWS-2012241	10/11/2018 10:10	0000	0000	1	1	
COL-MWS-2012239	10/11/2018 10:19	3100	0000	3	1	Lining Failure Detached - Wall Interior.
COL-MWS-2008706	10/11/2018 10:36	0000	0000	1	1	
COL-MWS-2008705	10/11/2018 10:44	0000	2100	1	2	Obstacle brick - brick on the bench.
COL-MWS-2008704	10/11/2018 10:51	0000	0000	1	1	
COL-MWS-2008703	10/11/2018 10:56	0000	0000	1	1	
COL-MWS-2008634	10/11/2018 11:14	0000	0000	1	1	
COL-MWS-2009145	10/11/2018 11:40	0000	0000	1	1	
COL-MWS-2009146	10/11/2018 11:44	0000	0000	1	1	
COL-MWS-2009147	10/11/2018 11:48	0000	0000	1	1	
COL-MWS-2009148	10/11/2018 11:57	0000	0000	1	1	
COL-MWS-2010098	10/11/2018 12:30	0000	0000	1	1	
COL-MWS-2010097	10/11/2018 12:38	0000	0000	1	1	
COL-MWS-2010018	10/11/2018 13:30	0000	0000	1	1	
COL-MWS-2010019	10/11/2018 13:35	1100	0000	1	1	Crack in Bench.
COL-MWS-2010017	10/11/2018 13:42	0000	0000	1	1	
COL-MWS-2010015	10/11/2018 13:47	2100	0000	2	1	Fracture with rock in channel.
COL-MWS-2010016	10/11/2018 13:54	0000	0000	1	1	
COL-MWS-2005226	10/11/2018 14:03	0000	0000	1	1	
COL-MWS-2005224	10/11/2018 14:09	0000	0000	1	1	
COL-MWS-2005223	10/11/2018 14:13	0000	2100	1	2	Deposits attached other - debris in the channel at 3 o'clock.
COL-MWS-2005225	10/11/2018 14:20	5100	2100	5	2	Surface Reinforcement Corroded - channel is corroded. Obstacles - tree branch inside channel.
COL-MWS-2010029	10/12/2018 07:58	0000	0000	1	1	
COL-MWS-2010028	10/12/2018 08:05	3100	0000	3	1	Hole in bench.
COL-MWS-2010027	10/12/2018 08:10	0000	0000	1	1	
COL-MWS-2008687	10/12/2018 09:55	0000	0000	1	1	
COL-MWS-2008686	10/12/2018 10:14	0000	4100	1	4	Infiltration Runner
COL-MWS-2009138	10/12/2018 10:28	0000	0000	1	1	
COL-MWS-2009137	10/12/2018 10:32	0000	0000	1	1	
COL-MWS-2009136	10/12/2018 10:40	0000	0000	1	1	
COL-MWS-2009135	10/12/2018 10:49	0000	0000	1	1	
COL-MWS-2020089	10/12/2018 10:54	0000	2100	1	2	Obstacle pipe material.
COL-MWS-2008683	10/12/2018 11:09	3100	0000	3	1	Lining Failure Detached - Wall Interior.
COL-MWS-2008682	10/12/2018 11:20	0000	0000	1	1	
COL-MWS-2008681	10/12/2018 11:26	0000	0000	1	1	
COL-MWS-2008680	10/12/2018 11:32	0000	0000	1	1	
COL-MWS-2008679	10/12/2018 11:38	0000	0000	1	1	
COL-MWS-2008678	10/12/2018 11:45	0000	0000	1	1	
COL-MWS-2008677	10/12/2018 11:49	0000	0000	1	1	
COL-MWS-2008675	10/12/2018 11:53	0000	2100	1	2	Deposits attached other - light debris in the channel.
COL-MWS-2008676	10/12/2018 11:57	0000	0000	1	1	
COL-MWS-2008667	10/12/2018 12:12	0000	0000	1	1	
COL-MWS-2012344	10/12/2018 12:20	0000	0000	1	1	
COL-MWS-2013588	10/12/2018 12:36	0000	0000	1	1	
COL-MWS-2006739	10/12/2018 13:23	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2006740	10/12/2018 13:29	0000	0000	1	1	
COL-MWS-2006736	10/12/2018 13:33	0000	0000	1	1	
COL-MWS-2006737	10/12/2018 13:40	0000	0000	1	1	
COL-MWS-2006734	10/12/2018 13:42	0000	0000	1	1	
COL-MWS-2006735	10/12/2018 13:52	0000	1100	1	1	Water level at 10%. Plugged manhole down is plugged causing water to build up. Fine roots at join on bench.
COL-MWS-2006738	10/12/2018 14:01	0000	0000	1	1	
COL-MWS-2006741	10/12/2018 14:06	0000	0000	1	1	
COL-MWS-2006742	10/12/2018 14:08	0000	0000	1	1	
COL-MWS-2006745	10/12/2018 14:11	0000	2100	1	2	Obstacle other - stick or metal rod in the channel.
COL-MWS-2006744	10/12/2018 14:15	0000	0000	1	1	
COL-MWS-2006743	10/12/2018 14:17	0000	0000	1	1	
COL-MWS-2006732	10/12/2018 14:22	0000	0000	1	1	
COL-MWS-3002090	10/15/2018 08:26	0000	0000	1	1	
COL-MWS-3002091	10/15/2018 08:32	0000	0000	1	1	
COL-MWS-3002087	10/15/2018 08:36	0000	0000	1	1	
COL-MWS-3002084	10/15/2018 08:44	3100	0000	3	1	Hole in channel.
COL-MWS-3002083	10/15/2018 08:51	3100	0000	3	1	Hole in channel.
COL-MWS-3015737	10/15/2018 08:55	0000	0000	1	1	
COL-MWS-3015735	10/15/2018 09:01	3100	0000	3	1	Hole in channel.
COL-MWS-3015736	10/15/2018 09:06	0000	0000	1	1	
COL-MWS-3015753	10/15/2018 09:11	0000	0000	1	1	
COL-MWS-3015754	10/15/2018 09:15	0000	0000	1	1	
COL-MWS-3015755	10/15/2018 09:19	0000	0000	1	1	
COL-MWS-3002086	10/15/2018 09:23	0000	0000	1	1	
COL-MWS-3002089	10/15/2018 09:28	0000	0000	1	1	
COL-MWS-3002088	10/15/2018 09:32	0000	0000	1	1	
COL-MWS-3007288	10/15/2018 09:44	0000	0000	1	1	
COL-MWS-3015748	10/15/2018 09:50	0000	0000	1	1	
COL-MWS-3015749	10/15/2018 09:57	0000	0000	1	1	
COL-MWS-3015750	10/15/2018 10:03	0000	0000	1	1	
COL-MWS-3012179	10/15/2018 10:07	0000	0000	1	1	
COL-MWS-3015751	10/15/2018 10:12	0000	0000	1	1	
COL-MWS-3005315	10/15/2018 10:21	0000	5121	1	5	Deposits settled gravel - settled gravel in channel, 55% of pipe. Obstacle other - concrete chipped from bench.
COL-MWS-3014674	10/15/2018 10:31	0000	0000	1	1	
COL-MWS-3005314	10/15/2018 10:37	0000	0000	1	1	
COL-MWS-3005313	10/15/2018 10:43	0000	0000	1	1	
COL-MWS-3005312	10/15/2018 10:48	0000	0000	1	1	
COL-MWS-3014676	10/15/2018 11:02	0000	0000	1	1	
COL-MWS-3014678	10/15/2018 11:10	0000	0000	1	1	
COL-MWS-3014680	10/15/2018 11:14	0000	2100	1	2	Deposits settled fine - light debris in channel.
COL-MWS-3014684	10/15/2018 11:20	0000	3100	1	3	Deposits settled gravel - light debris in channel.
COL-MWS-3014686	10/15/2018 11:25	0000	0000	1	1	
COL-MWS-3014687	10/15/2018 11:30	0000	0000	1	1	
COL-MWS-3015003	10/15/2018 11:44	0000	0000	1	1	
COL-MWS-3015002	10/15/2018 12:08	0000	0000	1	1	
COL-MWS-3015001	10/15/2018 12:11	0000	0000	1	1	
COL-MWS-3014970	10/15/2018 12:15	0000	0000	1	1	
COL-MWS-3014969	10/15/2018 12:21	0000	0000	1	1	
COL-MWS-3014968	10/15/2018 12:26	0000	0000	1	1	
COL-MWS-3014973	10/15/2018 12:31	0000	0000	1	1	
COL-MWS-3014974	10/15/2018 12:36	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-3015009	10/15/2018 12:43	0000	0000	1	1	
COL-MWS-3015008	10/15/2018 12:54	0000	0000	1	1	
COL-MWS-3015007	10/15/2018 12:59	0000	0000	1	1	
COL-MWS-3014998	10/15/2018 13:05	0000	0000	1	1	
COL-MWS-3015768	10/15/2018 13:13	0000	0000	1	1	
COL-MWS-3015769	10/15/2018 13:18	0000	5100	1	5	Deposits settled other - Debris on bench, 40%.
COL-MWS-3015026	10/15/2018 13:27	0000	0000	1	1	
COL-MWS-3015025	10/15/2018 13:32	0000	0000	1	1	
COL-MWS-3015024	10/15/2018 13:36	0000	0000	1	1	
COL-MWS-3015023	10/15/2018 13:42	0000	0000	1	1	
COL-MWS-3015005	10/15/2018 13:52	0000	0000	1	1	
COL-MWS-3015006	10/15/2018 13:56	5100	0000	5	1	Broken bench.
COL-MWS-3015017	10/15/2018 14:03	0000	0000	1	1	
COL-MWS-3007243	10/17/2018 07:34	0000	0000	1	1	
COL-MWS-3007242	10/17/2018 07:42	0000	0000	1	1	
COL-MWS-3014233	10/17/2018 07:50	0000	0000	1	1	
COL-MWS-3014975	10/17/2018 07:54	0000	0000	1	1	
COL-MWS-3007238	10/17/2018 08:00	0000	0000	1	1	
COL-MWS-3007241	10/17/2018 08:05	0000	0000	1	1	
COL-MWS-3007237	10/17/2018 08:13	0000	0000	1	1	
COL-MWS-3007236	10/17/2018 08:16	0000	0000	1	1	
COL-MWS-3002904	10/17/2018 08:22	0000	0000	1	1	
COL-MWS-3002905	10/17/2018 08:27	0000	2100	1	2	Deposits settled other - deposits at lip of pipe.
COL-MWS-3002897	10/17/2018 08:34	0000	2100	1	2	Fine roots at barrel.
COL-MWS-3002896	10/17/2018 08:40	0000	2100	1	2	Deposits settled gravel. Light debris in channel.
COL-MWS-3005554	10/17/2018 08:48	0000	0000	1	1	
COL-MWS-3005555	10/17/2018 08:54	0000	0000	1	1	
COL-MWS-3005556	10/17/2018 09:01	0000	0000	1	1	
COL-MWS-3005557	10/17/2018 09:05	0000	0000	1	1	
COL-MWS-3015805	10/17/2018 09:15	3100	0000	3	1	Multiple cracks in chimney.
COL-MWS-3015806	10/17/2018 09:22	0000	0000	1	1	
COL-MWS-3015808	10/17/2018 09:29	0000	2100	1	2	Deposits settled other - asphalt on bench.
COL-MWS-3015807	10/17/2018 09:36	0000	0000	1	1	
COL-MWS-3014656	10/17/2018 09:43	0000	0000	1	1	
COL-MWS-3006724	10/17/2018 10:16	0000	0000	1	1	
COL-MWS-3012830	10/17/2018 10:31	0000	0000	1	1	
COL-MWS-3006722	10/17/2018 10:34	0000	0000	1	1	
COL-MWS-3006725	10/17/2018 10:45	0000	0000	1	1	
COL-MWS-3014670	10/17/2018 10:53	3100	0000	3	1	Lining Failure Detached - Wall Interior.
COL-MWS-2006746	10/17/2018 11:08	0000	0000	1	1	
COL-MWS-3002115	10/17/2018 11:46	0000	0000	1	1	
COL-MWS-3002116	10/17/2018 11:54	0000	0000	1	1	
COL-MWS-3002117	10/17/2018 11:56	0000	0000	1	1	
COL-MWS-2002120	10/17/2018 12:04	0000	2100	1	2	Obstacle other - stick in the channel.
COL-MWS-2002118	10/17/2018 12:08	0000	0000	1	1	
COL-MWS-3002059	10/17/2018 12:17	0000	0000	1	1	
COL-MWS-3002058	10/17/2018 12:22	0000	2100	1	2	Deposits attached grease - light grease and deposits.
COL-MWS-3000209	10/17/2018 12:28	0000	0000	1	1	
COL-MWS-3014649	10/17/2018 12:36	0000	0000	1	1	
COL-MWS-3014647	10/17/2018 12:40	0000	0000	1	1	
COL-MWS-3014645	10/17/2018 12:45	0000	0000	1	1	
COL-MWS-3002119	10/17/2018 12:52	0000	0000	1	1	

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COL-MWS-2010014	10/17/2018 13:02	0000	0000	1	1	
COL-MWS-3014648	10/17/2018 13:17	0000	0000	1	1	
COL-MWS-3014646	10/17/2018 13:22	0000	0000	1	1	
COL-MWS-3014940	10/17/2018 13:26	0000	0000	1	1	
COL-MWS-3014941	10/17/2018 13:30	0000	2100	1	2	Depsits attached other - light debris on bench.
COL-MWS-3014939	10/17/2018 13:36	0000	0000	1	1	
COL-MWS-2001411	10/17/2018 14:07	0000	0000	1	1	
COL-MWS-2006218	10/17/2018 14:12	0000	0000	1	1	
COL-MWS-2001410	10/17/2018 14:18	0000	0000	1	1	
COL-MWS-2001456	10/17/2018 14:22	0000	0000	1	1	
COL-MWS-2001455	10/17/2018 14:29	2100	0000	2	1	Fracture in bench.
COL-MWS-4010726	10/19/2018 07:21	0000	0000	1	1	
COL-MWS-4010725	10/19/2018 07:30	0000	0000	1	1	
COL-MWS-4005322	10/19/2018 07:36	0000	0000	1	1	
COL-MWS-4005321	10/19/2018 07:42	0000	0000	1	1	
COL-MWS-4005319	10/19/2018 07:48	0000	0000	1	1	
COL-MWS-4005318	10/19/2018 07:55	0000	0000	1	1	
COL-MWS-4005317	10/19/2018 07:59	0000	0000	1	1	
COL-MWS-4005320	10/19/2018 08:04	0000	0000	1	1	
COL-MWS-4000321	10/19/2018 08:10	0000	0000	1	1	
COL-MWS-4000320	10/19/2018 08:16	0000	0000	1	1	
COL-MWS-4000318	10/19/2018 08:23	0000	0000	1	1	
COL-MWS-4000319	10/19/2018 08:30	0000	0000	1	1	
COL-MWS-4000316	10/19/2018 08:35	0000	0000	1	1	
COL-MWS-4000317	10/19/2018 08:41	0000	0000	1	1	
COL-MWS-4000315	10/19/2018 08:45	0000	0000	1	1	
COL-MWS-4013276	10/19/2018 08:49	0000	0000	1	1	
COL-MWS-4010754	10/19/2018 08:54	0000	0000	1	1	
COL-MWS-4010753	10/19/2018 09:00	0000	0000	1	1	
COL-MWS-4010752	10/19/2018 09:08	0000	0000	1	1	
COL-MWS-4010751	10/19/2018 09:12	0000	0000	1	1	
COL-MWS-4013274	10/19/2018 09:17	0000	0000	1	1	
COL-MWS-4013277	10/19/2018 09:23	0000	0000	1	1	
COL-MWS-4013107	10/19/2018 09:29	0000	0000	1	1	
COL-MWS-4020085	10/19/2018 09:34	0000	0000	1	1	
COL-MWS-4013103	10/19/2018 09:38	0000	0000	1	1	
COL-MWS-4010750	10/19/2018 09:44	0000	0000	1	1	
COL-MWS-4010746	10/19/2018 09:50	0000	0000	1	1	
COL-MWS-4010737	10/19/2018 09:55	0000	0000	1	1	
COL-MWS-4010747	10/19/2018 10:01	0000	0000	1	1	
COL-MWS-4010748	10/19/2018 10:04	0000	0000	1	1	
COL-MWS-4010749	10/19/2018 10:08	0000	0000	1	1	
COL-MWS-4010732	10/19/2018 10:12	0000	0000	1	1	
COL-MWS-4005328	10/19/2018 10:23	0000	0000	1	1	
COL-MWS-4005327	10/19/2018 10:29	0000	0000	1	1	
COL-MWS-4010730	10/19/2018 10:41	0000	0000	1	1	
COL-MWS-4005332	10/19/2018 10:46	0000	0000	1	1	
COL-MWS-4005325	10/19/2018 10:51	0000	0000	1	1	
COL-MWS-4005324	10/19/2018 10:59	0000	1100	1	1	Fine roots connection - roots intruding through crevise of wall and bench.
COL-MWS-4003964	10/19/2018 11:08	0000	0000	1	1	
COL-MWS-4003963	10/19/2018 11:14	0000	0000	1	1	
COL-MWS-4003977	10/19/2018 11:21	0000	0000	1	1	
COL-MWS-4003976	10/19/2018 11:33	0000	0000	1	1	
COL-MWS-4008138	10/19/2018 11:38	0000	0000	1	1	
COL-MWS-4008145	10/19/2018 11:43	0000	0000	1	1	
COL-MWS-4008144	10/19/2018 11:49	0000	0000	1	1	
COL-MWS-4008143	10/19/2018 11:53	0000	0000	1	1	
COL-MWS-4012292	10/19/2018 11:58	0000	0000	1	1	
COL-MWS-4008104	10/19/2018 12:03	0000	2100	1	2	Deposits attached grease - light grease in channel.
COL-MWS-4008085	10/19/2018 12:08	0000	0000	1	1	

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COL-MWS-4008101	10/19/2018 12:14	0000	0000	1	1	
COL-MWS-4008102	10/19/2018 12:18	0000	0000	1	1	
COL-MWS-4008123	10/19/2018 13:49	0000	0000	1	1	
COL-MWS-4008137	10/19/2018 13:59	0000	0000	1	1	
COL-MWS-4008136	10/19/2018 14:04	0000	0000	1	1	
COL-MWS-4008135	10/19/2018 14:09	0000	0000	1	1	
COL-MWS-4008127	10/19/2018 14:20	0000	0000	1	1	
COL-MWS-4008130	10/22/2018 07:34	0000	0000	1	1	
COL-MWS-4008129	10/22/2018 07:39	0000	0000	1	1	
COL-MWS-4008128	10/22/2018 07:45	0000	0000	1	1	
COL-MWS-4008121	10/22/2018 07:50	0000	0000	1	1	
COL-MWS-4008119	10/22/2018 08:01	0000	2100	1	2	Obstacle other - pipe on bench.
COL-MWS-4008118	10/22/2018 08:06	0000	0000	1	1	
COL-MWS-4008115	10/22/2018 08:11	0000	0000	1	1	
COL-MWS-4008114	10/22/2018 08:17	0000	0000	1	1	
COL-MWS-4008126	10/22/2018 08:21	0000	0000	1	1	
COL-MWS-4008125	10/22/2018 08:25	0000	0000	1	1	
COL-MWS-4008124	10/22/2018 08:29	0000	0000	1	1	
COL-MWS-4008113	10/22/2018 08:36	0000	0000	1	1	
COL-MWS-4008112	10/22/2018 08:41	0000	0000	1	1	
COL-MWS-4008111	10/22/2018 08:45	0000	0000	1	1	
COL-MWS-4008108	10/22/2018 08:54	0000	0000	1	1	
COL-MWS-4008109	10/22/2018 08:59	0000	0000	1	1	
COL-MWS-4004072	10/22/2018 09:04	0000	0000	1	1	
COL-MWS-4004071	10/22/2018 09:09	0000	0000	1	1	
COL-MWS-4004073	10/22/2018 09:14	0000	0000	1	1	
COL-MWS-4004074	10/22/2018 09:18	0000	0000	1	1	
COL-MWS-4004070	10/22/2018 09:25	0000	0000	1	1	
COL-MWS-4004067	10/22/2018 09:32	0000	0000	1	1	
COL-MWS-4004068	10/22/2018 09:36	0000	0000	1	1	
COL-MWS-4008024	10/22/2018 09:45	0000	0000	1	1	
COL-MWS-4008116	10/22/2018 09:49	0000	0000	1	1	
COL-MWS-4008023	10/22/2018 09:54	0000	0000	1	1	
COL-MWS-4008022	10/22/2018 10:01	0000	0000	1	1	
COL-MWS-4008019	10/22/2018 10:05	0000	2100	1	2	Deposits attached grease - light grease in channel.
COL-MWS-4008021	10/22/2018 10:11	0000	0000	1	1	
COL-MWS-4008020	10/22/2018 10:16	0000	0000	1	1	
COL-MWS-4008036	10/22/2018 10:19	0000	0000	1	1	
COL-MWS-4008037	10/22/2018 10:24	0000	0000	1	1	
COL-MWS-4008016	10/22/2018 10:28	0000	0000	1	1	
COL-MWS-4008015	10/22/2018 10:33	0000	0000	1	1	
COL-MWS-4008014	10/22/2018 10:38	0000	0000	1	1	
COL-MWS-4008013	10/22/2018 10:43	0000	0000	1	1	
COL-MWS-4008030	10/22/2018 10:46	0000	0000	1	1	
COL-MWS-4008031	10/22/2018 10:51	0000	2100	1	2	Deposits settled gravel. Light debris in channel.
COL-MWS-4008005	10/22/2018 10:56	0000	0000	1	1	
COL-MWS-4008006	10/22/2018 11:00	0000	3111	1	3	Medium roots at connection. Fine roots joint - cone interior joint.
COL-MWS-4008007	10/22/2018 11:09	0000	0000	1	1	
COL-MWS-4008002	10/22/2018 11:13	0000	0000	1	1	
COL-MWS-4008008	10/22/2018 11:18	0000	0000	1	1	
COL-MWS-4008009	10/22/2018 11:21	0000	0000	1	1	
COL-MWS-4008010	10/22/2018 11:27	0000	2100	1	2	Deposits attached grease - light grease in channel.
COL-MWS-4008011	10/22/2018 11:32	0000	0000	1	1	
COL-MWS-4008012	10/22/2018 11:36	3100	0000	3	1	Lining Failure Blistered in Chimney
COL-MWS-4008003	10/22/2018 11:43	0000	0000	1	1	
COL-MWS-4008004	10/22/2018 11:46	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4008072	10/22/2018 12:55	0000	0000	1	1	
COL-MWS-4008074	10/22/2018 13:01	0000	0000	1	1	
COL-MWS-4008073	10/22/2018 13:06	0000	0000	1	1	
COL-MWS-4007988	10/22/2018 13:30	0000	0000	1	1	
COL-MWS-4007989	10/22/2018 13:39	0000	0000	1	1	
COL-MWS-4007990	10/22/2018 13:44	0000	0000	1	1	
COL-MWS-4008001	10/22/2018 13:49	0000	0000	1	1	
COL-MWS-4007987	10/22/2018 13:56	0000	0000	1	1	
COL-MWS-4007985	10/23/2018 07:42	0000	0000	1	1	
COL-MWS-4008159	10/23/2018 07:48	0000	2100	1	2	Obstacle other - stick.
COL-MWS-4004077	10/23/2018 07:53	0000	0000	1	1	
COL-MWS-4004078	10/23/2018 07:56	0000	0000	1	1	
COL-MWS-4004079	10/23/2018 08:00	0000	0000	1	1	
COL-MWS-4007986	10/23/2018 08:04	0000	2100	1	2	Deposits attached other - deposits on channel.
COL-MWS-4007997	10/23/2018 08:11	4100	2100	4	2	Broken - broken chimney.
COL-MWS-4007998	10/23/2018 08:17	0000	0000	1	1	
COL-MWS-4007999	10/23/2018 08:18	0000	0000	1	1	
COL-MWS-4008000	10/23/2018 08:24	0000	0000	1	1	
COL-MWS-4013188	10/23/2018 08:29	0000	0000	1	1	
COL-MWS-4013190	10/23/2018 08:33	0000	0000	1	1	
COL-MWS-4013191	10/23/2018 08:37	0000	0000	1	1	
COL-MWS-4013192	10/23/2018 08:40	0000	0000	1	1	
COL-MWS-4013193	10/23/2018 08:44	0000	0000	1	1	
COL-MWS-4013194	10/23/2018 08:49	0000	2100	1	2	Deposits attached grease - light grease in channel.
COL-MWS-4013178	10/23/2018 08:54	0000	0000	1	1	
COL-MWS-4013177	10/23/2018 08:56	0000	2100	1	2	Obstacle rocks - rock on bench.
COL-MWS-4013175	10/23/2018 09:03	0000	0000	1	1	
COL-MWS-4008017	10/23/2018 09:19	0000	0000	1	1	
COL-MWS-4004063	10/23/2018 09:34	0000	0000	1	1	
COL-MWS-4004062	10/23/2018 09:38	0000	0000	1	1	
COL-MWS-4004061	10/23/2018 09:41	0000	0000	1	1	
COL-MWS-4004055	10/23/2018 10:09	0000	0000	1	1	
COL-MWS-4004056	10/23/2018 10:13	0000	0000	1	1	
COL-MWS-4004043	10/23/2018 10:20	0000	0000	1	1	
COL-MWS-4004044	10/23/2018 10:23	0000	0000	1	1	
COL-MWS-4004042	10/23/2018 10:26	0000	0000	1	1	
COL-MWS-4004038	10/23/2018 10:32	0000	0000	1	1	
COL-MWS-4004041	10/23/2018 10:37	0000	0000	1	1	
COL-MWS-4004039	10/23/2018 10:41	0000	2100	1	2	Deposits settled gravel - light gravel in channel.
COL-MWS-4004040	10/23/2018 10:45	0000	0000	1	1	
COL-MWS-4004035	10/23/2018 10:49	0000	2100	1	2	Deposits attached grease - light grease in channel.
COL-MWS-4004016	10/23/2018 10:55	0000	4100	1	4	Infiltration Runner - Bench.
COL-MWS-4004026	10/23/2018 11:04	0000	2100	1	2	Deposits attached grease - light grease in channel. Possible infiltration.
COL-MWS-4004027	10/23/2018 11:11	3100	2100	3	2	Deposits attached grease - light grease in channel. Lining failure detached - lining is peeling.
COL-MWS-4004045	10/23/2018 11:16	0000	2100	1	2	Deposits attached grease - light grease in channel.

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4004046	10/23/2018 11:22	0000	0000	1	1	
COL-MWS-4004047	10/23/2018 11:26	0000	0000	1	1	
COL-MWS-4004048	10/23/2018 11:29	0000	2100	1	2	Deposits attached grease - light grease in channel.
COL-MWS-4004049	10/23/2018 11:37	0000	2100	1	2	Deposits settled other - light debris in channel.
COL-MWS-4004050	10/23/2018 11:42	0000	0000	1	1	
COL-MWS-4004051	10/23/2018 11:45	0000	0000	1	1	
COL-MWS-4013212	10/23/2018 12:53	0000	4100	1	4	Water level at 45% in channel. Infiltration runner - wall interior.
COL-MWS-4013220	10/23/2018 13:01	0000	0000	1	1	
COL-MWS-4013224	10/23/2018 13:07	0000	0000	1	1	
COL-MWS-4013221	10/23/2018 13:12	0000	0000	1	1	
COL-MWS-4013225	10/23/2018 13:17	0000	0000	1	1	
COL-MWS-4013226	10/23/2018 13:21	0000	0000	1	1	
COL-MWS-4005607	10/23/2018 13:26	0000	0000	1	1	
COL-MWS-4004008	10/23/2018 13:33	0000	0000	1	1	
COL-MWS-4004002	10/23/2018 13:45	0000	2100	1	2	Deposits attached grease - light grease in channel.
COL-MWS-4004001	10/23/2018 13:52	0000	0000	1	1	
COL-MWS-4004000	10/23/2018 13:56	0000	0000	1	1	
COL-MWS-4000434	10/23/2018 14:00	0000	0000	1	1	
COL-MWS-4003999	10/23/2018 14:10	0000	0000	1	1	
COL-MWS-4003996	10/24/2018 07:34	0000	0000	1	1	
COL-MWS-4003997	10/24/2018 07:40	0000	0000	1	1	
COL-MWS-4003998	10/24/2018 07:44	0000	0000	1	1	
COL-MWS-4003995	10/24/2018 07:49	0000	3100	1	3	Deposits attached other - debris in channel.
COL-MWS-4000439	10/24/2018 07:56	0000	0000	1	1	
COL-MWS-4003992	10/24/2018 08:01	0000	0000	1	1	
COL-MWS-4003993	10/24/2018 08:07	0000	0000	1	1	
COL-MWS-4003994	10/24/2018 08:12	0000	0000	1	1	
COL-MWS-4000435	10/24/2018 08:15	0000	0000	1	1	
COL-MWS-4000436	10/24/2018 08:23	2100	0000	2	1	Crack in wall interior.
COL-MWS-4000438	10/24/2018 08:30	2100	0000	2	1	Crack in wall interior.
COL-MWS-4000437	10/24/2018 08:37	0000	0000	1	1	
COL-MWS-4008078	10/24/2018 09:07	0000	2100	1	2	Obstacle other - piece of concrete in the channel.
COL-MWS-4008100	10/24/2018 09:19	0000	0000	1	1	
COL-MWS-4003961	10/24/2018 09:37	0000	2100	1	2	Deposits attached grease - light grease in channel.
COL-MWS-4013069	10/24/2018 09:52	0000	0000	1	1	
COL-MWS-4013068	10/24/2018 09:56	0000	0000	1	1	
COL-MWS-4013071	10/24/2018 10:03	0000	0000	1	1	
COL-MWS-4013072	10/24/2018 10:09	0000	0000	1	1	
COL-MWS-4013073	10/24/2018 10:13	0000	0000	1	1	
COL-MWS-4013076	10/24/2018 10:18	0000	0000	1	1	
COL-MWS-4013077	10/24/2018 10:23	0000	0000	1	1	
COL-MWS-4013084	10/24/2018 10:28	0000	0000	1	1	
COL-MWS-4013090	10/24/2018 10:32	1100	0000	1	1	Crack in the channel.
COL-MWS-4013091	10/24/2018 10:40	0000	3100	1	3	Deposits attached grease - light grease in channel.
COL-MWS-4013092	10/24/2018 10:45	0000	2100	1	2	Deposits attached grease - light grease in channel.

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4013067	10/24/2018 10:49	0000	2100	1	2	Deposits attached grease - light grease in channel.
COL-MWS-4013093	10/24/2018 10:56	0000	2100	1	2	Deposits attached grease - light grease in channel.
COL-MWS-4013094	10/24/2018 11:01	0000	3100	1	3	Deposits attached grease - light grease in channel.
COL-MWS-2003001	10/24/2018 11:06	0000	0000	1	1	
COL-MWS-4013099	10/24/2018 11:13	0000	0000	1	1	
COL-MWS-4013098	10/24/2018 11:17	0000	0000	1	1	
COL-MWS-4013097	10/24/2018 11:21	0000	0000	1	1	
COL-MWS-4013096	10/24/2018 11:25	0000	0000	1	1	
COL-MWS-3014689	10/24/2018 11:50	0000	0000	1	1	
COL-MWS-4012219	10/24/2018 12:14	0000	0000	1	1	
COL-MWS-4007105	10/24/2018 12:20	0000	0000	1	1	
COL-MWS-4007104	10/24/2018 12:24	0000	0000	1	1	
COL-MWS-4012214	10/24/2018 12:28	0000	2100	1	2	Deposits attached grease - light grease in channel.
COL-MWS-4007102	10/24/2018 12:36	0000	0000	1	1	
COL-MWS-4007099	10/24/2018 12:45	0000	0000	1	1	
COL-MWS-4007098	10/24/2018 12:50	0000	0000	1	1	
COL-MWS-4012213	10/24/2018 12:55	0000	0000	1	1	
COL-MWS-4012210	10/24/2018 12:59	0000	0000	1	1	
COL-MWS-4012211	10/24/2018 13:05	1100	1100	1	1	Roots fine at joint - wall interior. Joint offset at wall interior.
COL-MWS-4012212	10/24/2018 13:12	0000	0000	1	1	
COL-MWS-4002815	10/24/2018 13:17	0000	0000	1	1	
COL-MWS-4007185	10/24/2018 13:22	0000	0000	1	1	
COL-MWS-4007184	10/24/2018 13:26	0000	0000	1	1	
COL-MWS-4007097	10/24/2018 14:01	0000	0000	1	1	
COL-MWS-4007096	10/24/2018 14:17	0000	0000	1	1	
COL-MWS-4007181	10/25/2018 07:22	0000	0000	1	1	
COL-MWS-4007180	10/25/2018 07:29	0000	0000	1	1	
COL-MWS-4007179	10/25/2018 07:34	0000	0000	1	1	
COL-MWS-4007178	10/25/2018 07:40	0000	0000	1	1	
COL-MWS-4007100	10/25/2018 07:44	0000	0000	1	1	
COL-MWS-4007101	10/25/2018 07:49	0000	0000	1	1	
COL-MWS-4007109	10/25/2018 07:57	0000	0000	1	1	
COL-MWS-4007108	10/25/2018 08:03	0000	0000	1	1	
COL-MWS-4007107	10/25/2018 08:07	0000	0000	1	1	
COL-MWS-4007106	10/25/2018 08:15	0000	0000	1	1	
COL-MWS-4012216	10/25/2018 08:18	0000	0000	1	1	
COL-MWS-4012217	10/25/2018 08:22	0000	0000	1	1	
COL-MWS-4007114	10/25/2018 08:26	0000	0000	1	1	
COL-MWS-4007111	10/25/2018 08:31	0000	2100	1	2	Deposits attached other - Rags and debris on bench.
COL-MWS-4007110	10/25/2018 08:37	0000	0000	1	1	
COL-MWS-4007168	10/25/2018 08:44	1100	0000	1	1	Crack on wall interior. Lining has crack.
COL-MWS-4003927	10/25/2018 08:50	0000	0000	1	1	
COL-MWS-4003928	10/25/2018 08:55	0000	0000	1	1	
COL-MWS-4005388	10/25/2018 08:59	0000	0000	1	1	
COL-MWS-4000300	10/25/2018 09:03	0000	0000	1	1	
COL-MWS-4000302	10/25/2018 09:07	0000	0000	1	1	
COL-MWS-4005391	10/25/2018 09:39	0000	0000	1	1	
COL-MWS-4005390	10/25/2018 09:47	0000	0000	1	1	
COL-MWS-4005389	10/25/2018 09:52	0000	0000	1	1	
COL-MWS-4007765	10/25/2018 10:06	0000	0000	1	1	
COL-MWS-4003901	10/25/2018 10:11	0000	0000	1	1	
COL-MWS-4003897	10/25/2018 10:16	0000	0000	1	1	
COL-MWS-4003896	10/25/2018 10:19	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4003899	10/25/2018 10:24	0000	0000	1	1	
COL-MWS-4003898	10/25/2018 10:28	0000	0000	1	1	
COL-MWS-4003895	10/25/2018 10:31	0000	0000	1	1	
COL-MWS-4003893	10/25/2018 10:35	0000	0000	1	1	
COL-MWS-4007860	10/25/2018 10:44	0000	0000	1	1	
COL-MWS-4007861	10/25/2018 10:51	1100	0000	1	1	Crack in cone interior.
COL-MWS-4007816	10/25/2018 10:56	1100	0000	1	1	Crack in chimney.
COL-MWS-4007815	10/25/2018 11:03	0000	0000	1	1	
COL-MWS-4007817	10/25/2018 11:29	0000	0000	1	1	
COL-MWS-4007383	10/25/2018 11:33	0000	0000	1	1	
COL-MWS-4007818	10/25/2018 11:39	0000	0000	1	1	
COL-MWS-4007849	10/25/2018 11:44	0000	0000	1	1	
COL-MWS-4007850	10/25/2018 12:03	0000	0000	1	1	
COL-MWS-4003882	10/25/2018 12:09	0000	0000	1	1	
COL-MWS-4007851	10/25/2018 12:13	0000	0000	1	1	
COL-MWS-4007766	10/25/2018 12:18	0000	0000	1	1	
COL-MWS-4007767	10/25/2018 12:47	0000	0000	1	1	
COL-MWS-4003900	10/25/2018 12:53	0000	0000	1	1	
COL-MWS-4007771	10/25/2018 13:04	0000	0000	1	1	
COL-MWS-4007770	10/25/2018 13:09	0000	0000	1	1	
COL-MWS-4007769	10/25/2018 13:15	0000	0000	1	1	
COL-MWS-4007773	10/25/2018 13:19	0000	0000	1	1	
COL-MWS-4007776	10/25/2018 13:24	0000	0000	1	1	
COL-MWS-4007772	10/25/2018 13:46	0000	0000	1	1	
COL-MWS-4007768	10/25/2018 13:55	0000	2100	1	2	Obstacle rocks - rock on bench.
COL-MWS-4003880	10/25/2018 14:03	0000	0000	1	1	
COL-MWS-4003884	10/25/2018 14:09	0000	0000	1	1	
COL-MWS-4003885	10/25/2018 14:16	0000	0000	1	1	
COL-MWS-4003888	10/26/2018 07:17	0000	0000	1	1	
COL-MWS-4003857	10/26/2018 07:25	0000	0000	1	1	
COL-MWS-4003858	10/26/2018 07:30	0000	0000	1	1	
COL-MWS-4003852	10/26/2018 07:36	0000	0000	1	1	
COL-MWS-4003851	10/26/2018 07:41	0000	0000	1	1	
COL-MWS-4003848	10/26/2018 07:46	0000	0000	1	1	
COL-MWS-4003847	10/26/2018 07:50	0000	0000	1	1	
COL-MWS-4003846	10/26/2018 07:53	0000	0000	1	1	
COL-MWS-4003845	10/26/2018 07:57	0000	2100	1	2	Deposits settled gravel - gravel in channel.
COL-MWS-4003853	10/26/2018 08:00	0000	0000	1	1	
COL-MWS-4003854	10/26/2018 08:03	0000	0000	1	1	
COL-MWS-4003855	10/26/2018 08:08	0000	0000	1	1	
COL-MWS-4003856	10/26/2018 08:11	0000	0000	1	1	
COL-MWS-4003827	10/26/2018 08:20	0000	0000	1	1	
COL-MWS-4003828	10/26/2018 08:25	0000	0000	1	1	
COL-MWS-4003829	10/26/2018 08:30	0000	0000	1	1	
COL-MWS-4003830	10/26/2018 08:34	0000	0000	1	1	
COL-MWS-4003837	10/26/2018 08:39	0000	0000	1	1	
COL-MWS-4003838	10/26/2018 08:49	0000	0000	1	1	
COL-MWS-4003839	10/26/2018 08:53	0000	3121	1	3	Deposits attached other - medium debris in channel. Deposits attached ragging - rags on bench.
COL-MWS-4007819	10/26/2018 09:03	0000	0000	1	1	
COL-MWS-4007820	10/26/2018 09:08	0000	0000	1	1	
COL-MWS-4007821	10/26/2018 09:11	0000	0000	1	1	
COL-MWS-4007822	10/26/2018 09:17	0000	0000	1	1	
COL-MWS-4007823	10/26/2018 09:22	0000	0000	1	1	
COL-MWS-4012287	10/26/2018 09:32	0000	0000	1	1	
COL-MWS-4007824	10/26/2018 09:36	0000	5100	1	5	Deposits settled gravel - heavy gravel covering 65% of channel.
COL-MWS-4003865	10/26/2018 09:43	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4003864	10/26/2018 09:49	0000	0000	1	1	
COL-MWS-4003863	10/26/2018 10:33	0000	0000	1	1	
COL-MWS-4007855	10/26/2018 10:38	0000	0000	1	1	
COL-MWS-4007856	10/26/2018 10:44	0000	0000	1	1	
COL-MWS-4007857	10/26/2018 10:50	0000	0000	1	1	
COL-MWS-4003868	10/26/2018 10:55	0000	0000	1	1	
COL-MWS-4003867	10/26/2018 11:06	0000	0000	1	1	
COL-MWS-4003866	10/26/2018 11:11	0000	0000	1	1	
COL-MWS-4007858	10/26/2018 11:16	0000	0000	1	1	
COL-MWS-4007814	10/26/2018 11:24	1100	0000	1	1	Joint separated - small joint separation.
COL-MWS-4007813	10/26/2018 11:30	0000	0000	1	1	
COL-MWS-4003875	10/26/2018 11:36	0000	0000	1	1	
COL-MWS-4003877	10/26/2018 11:43	0000	0000	1	1	
COL-MWS-4007812	10/26/2018 11:48	0000	0000	1	1	
COL-MWS-4007811	10/26/2018 11:53	0000	0000	1	1	
COL-MWS-4007808	10/26/2018 12:57	0000	0000	1	1	
COL-MWS-4007807	10/26/2018 13:04	0000	0000	1	1	
COL-MWS-4007805	10/26/2018 13:08	0000	0000	1	1	
COL-MWS-4012286	10/26/2018 13:14	0000	0000	1	1	
COL-MWS-4007803	10/26/2018 13:19	0000	0000	1	1	
COL-MWS-4003951	10/26/2018 13:25	0000	0000	1	1	
COL-MWS-4007806	10/26/2018 13:35	0000	0000	1	1	
COL-MWS-4007810	10/26/2018 13:43	0000	0000	1	1	
COL-MWS-4003948	10/26/2018 14:04	0000	0000	1	1	
COL-MWS-4003946	10/29/2018 07:31	0000	0000	1	1	
COL-MWS-4003947	10/29/2018 07:38	0000	0000	1	1	
COL-MWS-4007802	10/29/2018 07:54	0000	0000	1	1	
COL-MWS-4007801	10/29/2018 08:00	0000	0000	1	1	
COL-MWS-4007800	10/29/2018 08:06	0000	0000	1	1	
COL-MWS-4000420	10/29/2018 08:14	0000	0000	1	1	
COL-MWS-4003872	10/29/2018 08:23	0000	0000	1	1	
COL-MWS-4003894	10/29/2018 08:31	3200	2100	3	2	Deposits attached grease - grease in channel. Hole in channel and on bench.
COL-MWS-4007797	10/29/2018 08:43	0000	0000	1	1	
COL-MWS-4007798	10/29/2018 08:50	0000	0000	1	1	
COL-MWS-4007799	10/29/2018 08:54	0000	0000	1	1	
COL-MWS-4007790	10/29/2018 09:01	0000	0000	1	1	
COL-MWS-4004492	10/29/2018 09:09	0000	0000	1	1	
COL-MWS-4004488	10/29/2018 09:42	0000	0000	1	1	
COL-MWS-4004489	10/29/2018 09:47	0000	0000	1	1	
COL-MWS-4004490	10/29/2018 09:52	0000	0000	1	1	
COL-MWS-4004493	10/29/2018 09:57	0000	0000	1	1	
COL-MWS-4004487	10/29/2018 10:02	0000	0000	1	1	
COL-MWS-4004486	10/29/2018 10:05	0000	0000	1	1	
COL-MWS-4004485	10/29/2018 10:10	0000	0000	1	1	
COL-MWS-4000503	10/29/2018 10:14	0000	0000	1	1	
COL-MWS-4000504	10/29/2018 10:19	0000	0000	1	1	
COL-MWS-4000505	10/29/2018 10:24	0000	0000	1	1	
COL-MWS-4004484	10/29/2018 10:31	0000	0000	1	1	
COL-MWS-4004536	10/29/2018 10:40	0000	0000	1	1	
COL-MWS-4004537	10/29/2018 10:48	0000	0000	1	1	
COL-MWS-4004538	10/29/2018 10:51	0000	0000	1	1	
COL-MWS-4004539	10/29/2018 10:58	0000	0000	1	1	
COL-MWS-4004525	10/29/2018 11:08	0000	0000	1	1	
COL-MWS-4004526	10/29/2018 11:16	5100	0000	5	1	Surface reinforcement Corroded - bench and channel are corroding.
COL-MWS-4004527	10/29/2018 11:24	0000	0000	1	1	
COL-MWS-4004528	10/29/2018 11:30	0000	2100	1	2	Deposits settled other - medium debris in channel.

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4004529	10/29/2018 11:41	0000	0000	1	1	
COL-MWS-4004531	10/29/2018 11:46	0000	0000	1	1	
COL-MWS-4004530	10/29/2018 11:52	0000	0000	1	1	
COL-MWS-4015273	10/29/2018 12:01	0000	0000	1	1	
COL-MWS-4004494	10/29/2018 12:14	0000	0000	1	1	
COL-MWS-4000497	10/29/2018 12:27	0000	0000	1	1	
COL-MWS-4000509	10/29/2018 12:36	0000	0000	1	1	
COL-MWS-4000510	10/29/2018 12:42	0000	0000	1	1	
COL-MWS-4000511	10/29/2018 12:47	0000	0000	1	1	
COL-MWS-4000512	10/29/2018 12:53	0000	2100	1	2	Deposits settled gravel - debris in the channel.
COL-MWS-4000507	10/29/2018 13:02	0000	0000	1	1	
COL-MWS-4000508	10/29/2018 13:09	0000	0000	1	1	
COL-MWS-4000498	10/29/2018 13:15	0000	0000	1	1	
COL-MWS-4000499	10/29/2018 13:21	0000	5100	1	5	Deposits settled other - heavy debris in channel. 70% of channel blocked.
COL-MWS-4004553	10/29/2018 13:30	2100	3121	2	3	Deposits attached ragging - rag in line. Offset joint - pipe is not in line with channel. Deposits settled gravel - debris on bench.
COL-MWS-4000500	10/29/2018 13:39	0000	0000	1	1	
COL-MWS-4000501	10/29/2018 13:58	0000	0000	1	1	
COL-MWS-4004533	10/29/2018 14:03	0000	0000	1	1	
COL-MWS-4004491	10/29/2018 14:08	0000	0000	1	1	
COL-MWS-4000502	10/29/2018 14:16	0000	0000	1	1	
COL-MWS-4000418	10/31/2018 07:50	0000	0000	1	1	
COL-MWS-4004542	10/31/2018 08:06	0000	0000	1	1	
COL-MWS-4004541	10/31/2018 08:12	0000	0000	1	1	
COL-MWS-4000513	10/31/2018 08:16	0000	0000	1	1	
COL-MWS-4004614	10/31/2018 08:25	0000	0000	1	1	
COL-MWS-4004623	10/31/2018 08:30	0000	0000	1	1	
COL-MWS-4004545	10/31/2018 08:38	0000	2100	1	2	Deposits attached other - light debris in the channel.
COL-MWS-4004546	10/31/2018 08:45	0000	0000	1	1	
COL-MWS-4004540	10/31/2018 08:52	0000	0000	1	1	
COL-MWS-4007876	10/31/2018 08:57	0000	0000	1	1	
COL-MWS-4007873	10/31/2018 09:05	0000	0000	1	1	
COL-MWS-4007874	10/31/2018 09:13	0000	0000	1	1	
COL-MWS-4007875	10/31/2018 09:19	0000	0000	1	1	
COL-MWS-4007872	10/31/2018 09:24	0000	0000	1	1	
COL-MWS-4007870	10/31/2018 09:28	0000	2100	1	2	Deposits settled other - Debris inside pipe.
COL-MWS-4007863	10/31/2018 09:42	0000	0000	1	1	
COL-MWS-4007867	10/31/2018 09:50	0000	0000	1	1	
COL-MWS-4007866	10/31/2018 10:00	0000	2100	1	2	Obstacle other - stick and debris in the channel.
COL-MWS-4007881	10/31/2018 10:08	0000	5100	1	5	Deposits attached other - heavy debris in the channel. 50% of pipe.
COL-MWS-4007883	10/31/2018 10:19	0000	0000	1	1	
COL-MWS-4015280	10/31/2018 10:25	0000	0000	1	1	
COL-MWS-4015279	10/31/2018 10:31	0000	0000	1	1	
COL-MWS-4015277	10/31/2018 10:35	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4015276	10/31/2018 10:39	0000	2100	1	2	Deposits settled gravel - light gravel in channel.
COL-MWS-4015275	10/31/2018 10:43	0000	0000	1	1	
COL-MWS-4015274	10/31/2018 10:46	0000	0000	1	1	
COL-MWS-4007885	10/31/2018 10:52	0000	0000	1	1	
COL-MWS-4007884	10/31/2018 10:56	0000	0000	1	1	
COL-MWS-4007955	10/31/2018 11:25	0000	0000	1	1	
COL-MWS-4007954	10/31/2018 11:32	0000	0000	1	1	
COL-MWS-4007947	10/31/2018 11:41	0000	0000	1	1	
COL-MWS-4007946	10/31/2018 11:45	0000	0000	1	1	
COL-MWS-4007948	10/31/2018 11:50	0000	0000	1	1	
COL-MWS-4007949	10/31/2018 11:54	0000	0000	1	1	
COL-MWS-4007950	10/31/2018 11:58	0000	2100	1	2	Deposits settled gravel - gravel on the bench.
COL-MWS-4007951	10/31/2018 12:04	0000	2200	1	2	Deposits settled gravel - gravel on the bench and below water in channel.
COL-MWS-4007966	10/31/2018 12:12	0000	2100	1	2	Obstacle other - piece of concrete on the bench.
COL-MWS-4007965	10/31/2018 12:19	0000	0000	1	1	
COL-MWS-4007964	10/31/2018 12:22	0000	2100	1	2	Deposits attached other - attached deposits on the channel.
COL-MWS-4007963	10/31/2018 12:28	0000	0000	1	1	
COL-MWS-4007962	10/31/2018 12:33	0000	3100	1	3	Deposits attached ragging - rag ball in the channel.
COL-MWS-4007961	10/31/2018 12:43	0000	0000	1	1	
COL-MWS-4007960	10/31/2018 12:51	0000	0000	1	1	
COL-MWS-4007959	10/31/2018 12:55	0000	0000	1	1	
COL-MWS-4007956	10/31/2018 12:59	0000	0000	1	1	
COL-MWS-4007967	10/31/2018 13:07	0000	0000	1	1	
COL-MWS-4004588	10/31/2018 13:14	0000	0000	1	1	
COL-MWS-4004587	10/31/2018 13:20	0000	0000	1	1	
COL-MWS-4004586	10/31/2018 13:25	0000	0000	1	1	
COL-MWS-4004585	10/31/2018 13:30	0000	0000	1	1	
COL-MWS-4004584	10/31/2018 13:36	0000	0000	1	1	
COL-MWS-4004609	10/31/2018 13:41	0000	0000	1	1	
COL-MWS-4004608	10/31/2018 13:45	0000	0000	1	1	
COL-MWS-4004606	10/31/2018 13:50	0000	0000	1	1	
COL-MWS-4004607	10/31/2018 13:55	0000	0000	1	1	
COL-MWS-4004622	11/1/2018 07:17	0000	0000	1	1	
COL-MWS-4004621	11/1/2018 07:23	0000	0000	1	1	
COL-MWS-4004620	11/1/2018 07:35	0000	0000	1	1	
COL-MWS-4004616	11/1/2018 07:42	0000	0000	1	1	
COL-MWS-4004617	11/1/2018 07:46	0000	0000	1	1	
COL-MWS-4004618	11/1/2018 07:50	0000	0000	1	1	
COL-MWS-4004619	11/1/2018 07:55	0000	0000	1	1	
COL-MWS-4004595	11/1/2018 08:02	0000	0000	1	1	
COL-MWS-4004594	11/1/2018 08:07	0000	0000	1	1	
COL-MWS-4004593	11/1/2018 08:12	0000	0000	1	1	
COL-MWS-4004592	11/1/2018 08:17	0000	0000	1	1	
COL-MWS-4004591	11/1/2018 08:23	0000	0000	1	1	
COL-MWS-4004596	11/1/2018 08:31	0000	0000	1	1	
COL-MWS-4004597	11/1/2018 08:35	0000	0000	1	1	
COL-MWS-4004589	11/1/2018 08:44	0000	0000	1	1	
COL-MWS-4004590	11/1/2018 08:50	0000	0000	1	1	
COL-MWS-4004554	11/1/2018 09:00	0000	0000	1	1	
COL-MWS-4004555	11/1/2018 09:04	0000	0000	1	1	
COL-MWS-4004556	11/1/2018 09:10	0000	0000	1	1	
COL-MWS-4004557	11/1/2018 09:14	0000	0000	1	1	
COL-MWS-4004558	11/1/2018 09:20	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4004559	11/1/2018 09:26	0000	0000	1	1	
COL-MWS-4004560	11/1/2018 09:31	0000	0000	1	1	
COL-MWS-4004563	11/1/2018 09:36	0000	0000	1	1	
COL-MWS-4004562	11/1/2018 09:45	0000	0000	1	1	
COL-MWS-4004561	11/1/2018 09:49	0000	0000	1	1	
COL-MWS-4004564	11/1/2018 09:56	0000	0000	1	1	
COL-MWS-4004565	11/1/2018 10:02	0000	0000	1	1	
COL-MWS-4004582	11/1/2018 10:08	0000	0000	1	1	
COL-MWS-4004583	11/1/2018 10:14	0000	0000	1	1	
COL-MWS-4004573	11/1/2018 10:20	0000	0000	1	1	
COL-MWS-4004572	11/1/2018 10:25	0000	0000	1	1	
COL-MWS-4004571	11/1/2018 10:30	0000	0000	1	1	
COL-MWS-4004575	11/1/2018 11:30	0000	0000	1	1	
COL-MWS-4004576	11/1/2018 11:36	0000	0000	1	1	
COL-MWS-4004577	11/1/2018 11:40	0000	0000	1	1	
COL-MWS-4004574	11/1/2018 11:45	0000	0000	1	1	
COL-MWS-4008324	11/1/2018 11:51	0000	0000	1	1	
COL-MWS-4004578	11/1/2018 11:57	0000	0000	1	1	
COL-MWS-4004581	11/1/2018 12:04	0000	0000	1	1	
COL-MWS-4004580	11/1/2018 12:08	3200	0000	3	1	Hole in Wall Interior. Multiple cracks in wall interior.
COL-MWS-4004579	11/1/2018 12:15	0000	0000	1	1	
COL-MWS-4004523	11/1/2018 12:22	0000	0000	1	1	
COL-MWS-4004522	11/1/2018 12:27	0000	0000	1	1	
COL-MWS-4004566	11/1/2018 12:35	0000	0000	1	1	
COL-MWS-4004567	11/1/2018 12:40	0000	0000	1	1	
COL-MWS-4004568	11/1/2018 12:44	0000	0000	1	1	
COL-MWS-4004569	11/1/2018 12:49	0000	0000	1	1	
COL-MWS-4004570	11/1/2018 12:56	0000	5100	1	5	Obstacle other - rags stuck in channel. Covering 40% of channel.
COL-MWS-4004495	11/1/2018 13:03	0000	5100	1	5	Obstacle other - Rocks and Debris in channel.
COL-MWS-4004496	11/1/2018 13:10	0000	0000	1	1	
COL-MWS-4004502	11/1/2018 13:21	0000	0000	1	1	
COL-MWS-4004503	11/1/2018 13:26	0000	0000	1	1	
COL-MWS-4004504	11/1/2018 13:31	0000	0000	1	1	
COL-MWS-4008714	11/1/2018 14:01	0000	0000	1	1	
COL-MWS-4008716	11/1/2018 14:08	0000	0000	1	1	
COL-MWS-4008720	11/2/2018 07:40	0000	0000	1	1	
COL-MWS-4008719	11/2/2018 07:46	0000	0000	1	1	
COL-MWS-4008718	11/2/2018 07:53	0000	0000	1	1	
COL-MWS-4008925	11/2/2018 08:02	0000	0000	1	1	
COL-MWS-4008929	11/2/2018 08:10	0000	0000	1	1	
COL-MWS-4008928	11/2/2018 08:15	0000	0000	1	1	
COL-MWS-4008930	11/2/2018 08:22	0000	0000	1	1	
COL-MWS-4004968	11/2/2018 08:32	0000	3100	1	3	Deposits settled other - debris on bench due to connection without channel.
COL-MWS-4009076	11/2/2018 08:47	0000	0000	1	1	
COL-MWS-4009077	11/2/2018 08:54	0000	0000	1	1	
COL-MWS-4009078	11/2/2018 09:03	0000	0000	1	1	
COL-MWS-4012325	11/2/2018 09:12	0000	0000	1	1	
COL-MWS-4012324	11/2/2018 09:18	0000	0000	1	1	
COL-MWS-4009046	11/2/2018 09:25	0000	4131	1	4	Deposits settled gravel - debris in connection. Roots medium joint - roots on joints of wall.
COL-MWS-4008597	11/2/2018 09:39	0000	0000	1	1	
COL-MWS-4008596	11/2/2018 09:45	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4008595	11/2/2018 09:53	2100	0000	2	1	Crack spiral - wall interior.
COL-MWS-4008594	11/2/2018 09:58	0000	0000	1	1	
COL-MWS-4008593	11/2/2018 10:03	0000	0000	1	1	
COL-MWS-4008582	11/2/2018 10:08	0000	0000	1	1	
COL-MWS-4008583	11/2/2018 10:13	0000	0000	1	1	
COL-MWS-4008584	11/2/2018 10:19	0000	0000	1	1	
COL-MWS-4008585	11/2/2018 10:24	0000	0000	1	1	
COL-MWS-4008586	11/2/2018 10:29	0000	0000	1	1	
COL-MWS-4008587	11/2/2018 10:32	0000	0000	1	1	
COL-MWS-4008588	11/2/2018 10:37	0000	0000	1	1	
COL-MWS-4008589	11/2/2018 10:43	0000	0000	1	1	
COL-MWS-4008590	11/2/2018 10:48	0000	0000	1	1	
COL-MWS-4008591	11/2/2018 10:53	0000	0000	1	1	
COL-MWS-4008598	11/2/2018 11:00	0000	0000	1	1	
COL-MWS-4008592	11/2/2018 11:05	0000	0000	1	1	
COL-MWS-4008567	11/2/2018 12:06	0000	2100	1	2	Infiltration weeper - light infiltration coming from wall.
COL-MWS-4008569	11/2/2018 12:14	0000	0000	1	1	
COL-MWS-4008561	11/2/2018 12:19	0000	0000	1	1	
COL-MWS-4008560	11/2/2018 12:25	0000	0000	1	1	
COL-MWS-4008559	11/2/2018 12:32	0000	0000	1	1	
COL-MWS-4008552	11/2/2018 12:34	0000	0000	1	1	
COL-MWS-4008553	11/2/2018 12:38	0000	0000	1	1	
COL-MWS-4008562	11/2/2018 12:44	0000	0000	1	1	
COL-MWS-4008563	11/2/2018 12:48	0000	0000	1	1	
COL-MWS-4008564	11/2/2018 12:53	0000	0000	1	1	
COL-MWS-4008565	11/2/2018 12:57	0000	0000	1	1	
COL-MWS-4008566	11/2/2018 13:03	0000	0000	1	1	
COL-MWS-4008551	11/2/2018 13:10	0000	0000	1	1	
COL-MWS-4008554	11/2/2018 13:17	0000	0000	1	1	
COL-MWS-4008555	11/2/2018 13:21	0000	0000	1	1	
COL-MWS-4008556	11/2/2018 13:27	0000	0000	1	1	
COL-MWS-4008557	11/2/2018 13:34	0000	0000	1	1	
COL-MWS-4008558	11/2/2018 13:40	0000	3200	1	3	Obstacle other - log across bench.
COL-MWS-4008570	11/2/2018 13:49	0000	0000	1	1	
COL-MWS-4005017	11/2/2018 13:55	0000	0000	1	1	
COL-MWS-4009204	11/5/2018 07:35	0000	0000	1	1	
COL-MWS-4009202	11/5/2018 07:41	0000	0000	1	1	
COL-MWS-4009203	11/5/2018 07:47	0000	0000	1	1	
COL-MWS-4009199	11/5/2018 07:51	0000	0000	1	1	
COL-MWS-4009201	11/5/2018 07:57	0000	0000	1	1	
COL-MWS-4009198	11/5/2018 08:02	0000	0000	1	1	
COL-MWS-4009196	11/5/2018 08:08	0000	0000	1	1	
COL-MWS-4009197	11/5/2018 08:14	0000	0000	1	1	
COL-MWS-4009195	11/5/2018 08:19	0000	0000	1	1	
COL-MWS-4009192	11/5/2018 08:27	0000	0000	1	1	
COL-MWS-4009193	11/5/2018 08:40	0000	0000	1	1	
COL-MWS-4009194	11/5/2018 08:52	0000	0000	1	1	
COL-MWS-4009215	11/5/2018 09:02	0000	0000	1	1	
COL-MWS-4009214	11/5/2018 09:11	0000	0000	1	1	
COL-MWS-4009213	11/5/2018 09:17	0000	0000	1	1	
COL-MWS-4009218	11/5/2018 09:22	0000	0000	1	1	
COL-MWS-4009219	11/5/2018 09:39	0000	0000	1	1	
COL-MWS-4009220	11/5/2018 09:45	0000	0000	1	1	
COL-MWS-4009221	11/5/2018 09:52	0000	0000	1	1	
COL-MWS-4009217	11/5/2018 10:00	0000	0000	1	1	
COL-MWS-4009216	11/5/2018 10:09	0000	0000	1	1	
COL-MWS-4009223	11/5/2018 11:11	0000	0000	1	1	
COL-MWS-4009224	11/5/2018 11:18	0000	0000	1	1	
COL-MWS-4009225	11/5/2018 11:23	0000	0000	1	1	
COL-MWS-4008623	11/5/2018 11:29	0000	0000	1	1	
COL-MWS-4009226	11/5/2018 11:35	0000	0000	1	1	
COL-MWS-4009227	11/5/2018 11:40	0000	0000	1	1	
COL-MWS-4009230	11/5/2018 11:48	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4009232	11/5/2018 11:54	0000	2100	1	2	Obstacle construction debris - debris on bench.
COL-MWS-4009222	11/5/2018 12:05	0000	0000	1	1	
COL-MWS-4008940	11/5/2018 12:16	0000	0000	1	1	
COL-MWS-4008941	11/5/2018 12:22	0000	0000	1	1	
COL-MWS-4008945	11/5/2018 12:30	0000	0000	1	1	
COL-MWS-4008944	11/5/2018 12:41	0000	0000	1	1	
COL-MWS-4008943	11/5/2018 12:46	0000	0000	1	1	
COL-MWS-4008942	11/5/2018 12:51	0000	0000	1	1	
COL-MWS-4008936	11/5/2018 12:55	0000	0000	1	1	
COL-MWS-4008937	11/5/2018 13:00	0000	0000	1	1	
COL-MWS-4008938	11/5/2018 13:05	0000	0000	1	1	
COL-MWS-4008939	11/5/2018 13:10	0000	0000	1	1	
COL-MWS-4012421	11/5/2018 13:23	0000	0000	1	1	
COL-MWS-4008888	11/5/2018 13:28	0000	0000	1	1	
COL-MWS-4008860	11/5/2018 13:37	0000	0000	1	1	
COL-MWS-4008844	11/5/2018 13:44	0000	0000	1	1	
COL-MWS-4008843	11/5/2018 13:50	0000	0000	1	1	
COL-MWS-4008861	11/5/2018 13:59	0000	0000	1	1	
COL-MWS-4008898	11/5/2018 14:07	0000	0000	1	1	
COL-MWS-4008899	11/5/2018 14:13	0000	0000	1	1	
COL-MWS-4008893	11/5/2018 14:20	0000	0000	1	1	
COL-MWS-4008894	11/6/2018 07:28	0000	0000	1	1	
COL-MWS-4008912	11/6/2018 07:45	0000	0000	1	1	
COL-MWS-4008913	11/6/2018 07:49	0000	0000	1	1	
COL-MWS-4008914	11/6/2018 07:54	0000	0000	1	1	
COL-MWS-4008915	11/6/2018 07:59	0000	0000	1	1	
COL-MWS-4008916	11/6/2018 08:05	0000	0000	1	1	
COL-MWS-4004963	11/6/2018 08:13	0000	5100	1	5	Obstacle other - Rag blockage. 65 % of pipe.
COL-MWS-4008907	11/6/2018 08:29	0000	0000	1	1	
COL-MWS-4008892	11/6/2018 09:27	0000	0000	1	1	
COL-MWS-4008891	11/6/2018 09:34	0000	0000	1	1	
COL-MWS-4008890	11/6/2018 09:39	0000	0000	1	1	
COL-MWS-4008889	11/6/2018 09:44	0000	0000	1	1	
COL-MWS-4008909	11/6/2018 09:57	0000	0000	1	1	
COL-MWS-4008911	11/6/2018 10:02	0000	0000	1	1	
COL-MWS-4008910	11/6/2018 10:06	0000	0000	1	1	
COL-MWS-4008873	11/6/2018 10:12	0000	0000	1	1	
COL-MWS-4008874	11/6/2018 10:16	0000	0000	1	1	
COL-MWS-4008875	11/6/2018 10:20	0000	0000	1	1	
COL-MWS-4008876	11/6/2018 10:26	0000	0000	1	1	
COL-MWS-4008877	11/6/2018 10:31	0000	0000	1	1	
COL-MWS-4008885	11/6/2018 10:37	0000	0000	1	1	
COL-MWS-4008886	11/6/2018 10:42	0000	0000	1	1	
COL-MWS-4008887	11/6/2018 10:46	0000	0000	1	1	
COL-MWS-4008908	11/6/2018 10:54	0000	0000	1	1	
COL-MWS-4008880	11/6/2018 11:00	0000	0000	1	1	
COL-MWS-4008879	11/6/2018 11:05	0000	0000	1	1	
COL-MWS-4008959	11/6/2018 11:12	0000	0000	1	1	
COL-MWS-4008958	11/6/2018 11:20	0000	0000	1	1	
COL-MWS-4008957	11/6/2018 11:25	0000	0000	1	1	
COL-MWS-4008966	11/6/2018 11:32	0000	0000	1	1	
COL-MWS-4008963	11/6/2018 11:38	0000	0000	1	1	
COL-MWS-4008965	11/6/2018 11:46	0000	0000	1	1	
COL-MWS-4008964	11/6/2018 11:50	0000	0000	1	1	
COL-MWS-4008961	11/6/2018 11:57	0000	0000	1	1	
COL-MWS-4008962	11/6/2018 12:02	0000	0000	1	1	
COL-MWS-4008953	11/6/2018 12:07	0000	0000	1	1	
COL-MWS-4008948	11/6/2018 12:15	0000	0000	1	1	
COL-MWS-4008949	11/6/2018 12:21	0000	0000	1	1	
COL-MWS-4008950	11/6/2018 12:27	0000	0000	1	1	
COL-MWS-4008951	11/6/2018 12:32	0000	0000	1	1	
COL-MWS-4008952	11/6/2018 12:37	0000	0000	1	1	
COL-MWS-4009011	11/6/2018 12:45	0000	0000	1	1	
COL-MWS-4009010	11/6/2018 12:49	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4009012	11/6/2018 12:55	0000	0000	1	1	
COL-MWS-4009013	11/6/2018 13:00	0000	0000	1	1	
COL-MWS-4009014	11/6/2018 13:04	0000	0000	1	1	
COL-MWS-4009015	11/6/2018 13:09	0000	0000	1	1	
COL-MWS-4008933	11/6/2018 13:48	0000	0000	1	1	
COL-MWS-4008932	11/6/2018 13:53	0000	0000	1	1	
COL-MWS-4008931	11/6/2018 13:58	0000	0000	1	1	
COL-MWS-4013250	11/6/2018 14:09	0000	0000	1	1	
COL-MWS-4013251	11/6/2018 14:14	0000	0000	1	1	
COL-MWS-4013252	11/6/2018 14:18	0000	0000	1	1	
COL-MWS-4013239	11/7/2018 07:24	0000	0000	1	1	
COL-MWS-4013240	11/7/2018 07:30	0000	0000	1	1	
COL-MWS-4013249	11/7/2018 07:40	0000	0000	1	1	
COL-MWS-4013256	11/7/2018 07:47	0000	0000	1	1	
COL-MWS-4013255	11/7/2018 07:55	0000	0000	1	1	
COL-MWS-4013254	11/7/2018 08:00	0000	0000	1	1	
COL-MWS-4013253	11/7/2018 08:06	0000	0000	1	1	
COL-MWS-4013248	11/7/2018 08:15	0000	0000	1	1	
COL-MWS-4013247	11/7/2018 08:24	0000	0000	1	1	
COL-MWS-4013268	11/7/2018 08:32	0000	0000	1	1	
COL-MWS-4013267	11/7/2018 08:39	0000	0000	1	1	
COL-MWS-4013257	11/7/2018 08:46	0000	0000	1	1	
COL-MWS-4013261	11/7/2018 08:52	0000	0000	1	1	
COL-MWS-4013262	11/7/2018 08:57	0000	0000	1	1	
COL-MWS-4013263	11/7/2018 09:02	0000	0000	1	1	
COL-MWS-4013264	11/7/2018 09:06	0000	0000	1	1	
COL-MWS-4013265	11/7/2018 09:10	0000	0000	1	1	
COL-MWS-4008788	11/7/2018 09:32	0000	0000	1	1	
COL-MWS-4008789	11/7/2018 09:39	0000	0000	1	1	
COL-MWS-4008790	11/7/2018 09:46	0000	0000	1	1	
COL-MWS-4012419	11/7/2018 09:52	0000	0000	1	1	
COL-MWS-4008791	11/7/2018 09:56	0000	0000	1	1	
COL-MWS-4008872	11/7/2018 10:01	0000	0000	1	1	
COL-MWS-4008871	11/7/2018 10:08	0000	0000	1	1	
COL-MWS-4008870	11/7/2018 10:14	0000	0000	1	1	
COL-MWS-4008869	11/7/2018 10:19	0000	0000	1	1	
COL-MWS-4008866	11/7/2018 10:23	0000	0000	1	1	
COL-MWS-4008868	11/7/2018 10:28	0000	3100	1	3	Infiltration Dripper - Water dripping through wall interior.
COL-MWS-4008867	11/7/2018 10:36	0000	0000	1	1	
COL-MWS-4008864	11/7/2018 10:47	0000	0000	1	1	
COL-MWS-4008865	11/7/2018 10:51	0000	0000	1	1	
COL-MWS-4008863	11/7/2018 10:55	0000	0000	1	1	
COL-MWS-4012420	11/7/2018 11:00	0000	0000	1	1	
COL-MWS-4008862	11/7/2018 11:05	0000	0000	1	1	
COL-MWS-4008973	11/7/2018 11:14	0000	0000	1	1	
COL-MWS-4008974	11/7/2018 11:18	0000	0000	1	1	
COL-MWS-4008975	11/7/2018 11:24	0000	0000	1	1	
COL-MWS-4008976	11/7/2018 11:29	0000	0000	1	1	
COL-MWS-4008997	11/7/2018 13:13	0000	0000	1	1	
COL-MWS-4008996	11/7/2018 13:18	0000	0000	1	1	
COL-MWS-4008969	11/7/2018 13:34	0000	0000	1	1	
COL-MWS-4008970	11/7/2018 13:39	0000	0000	1	1	
COL-MWS-4008971	11/7/2018 13:42	0000	0000	1	1	
COL-MWS-4008972	11/7/2018 13:45	0000	0000	1	1	
COL-MWS-4008998	11/7/2018 13:50	0000	0000	1	1	
COL-MWS-4008999	11/7/2018 13:55	0000	0000	1	1	
COL-MWS-4008988	11/7/2018 14:00	0000	0000	1	1	
COL-MWS-4008792	11/7/2018 14:05	0000	0000	1	1	
COL-MWS-4008989	11/7/2018 14:09	0000	0000	1	1	
COL-MWS-4005012	11/8/2018 08:01	0000	0000	1	1	
COL-MWS-4005013	11/8/2018 08:14	0000	0000	1	1	
COL-MWS-4005014	11/8/2018 08:18	0000	0000	1	1	
COL-MWS-4005015	11/8/2018 08:24	0000	0000	1	1	
COL-MWS-4005016	11/8/2018 08:30	0000	0000	1	1	
COL-MWS-4005011	11/8/2018 08:35	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4005019	11/8/2018 08:41	0000	0000	1	1	
COL-MWS-4005018	11/8/2018 08:47	0000	0000	1	1	
COL-MWS-4005020	11/8/2018 08:52	0000	2100	1	2	Obstacle other - sticks on bench.
COL-MWS-4005006	11/8/2018 09:00	0000	0000	1	1	
COL-MWS-4005009	11/8/2018 09:13	0000	0000	1	1	
COL-MWS-4005008	11/8/2018 09:17	0000	0000	1	1	
COL-MWS-4005007	11/8/2018 09:22	0000	0000	1	1	
COL-MWS-4004999	11/8/2018 09:30	0000	0000	1	1	
COL-MWS-4004998	11/8/2018 09:38	0000	0000	1	1	
COL-MWS-4005000	11/8/2018 09:46	0000	0000	1	1	
COL-MWS-4005001	11/8/2018 09:55	0000	0000	1	1	
COL-MWS-4004987	11/8/2018 10:07	0000	0000	1	1	
COL-MWS-4004986	11/8/2018 10:14	0000	0000	1	1	
COL-MWS-4004985	11/8/2018 10:20	0000	0000	1	1	
COL-MWS-4008539	11/8/2018 10:23	0000	0000	1	1	
COL-MWS-4008550	11/8/2018 10:30	0000	0000	1	1	
COL-MWS-4008547	11/8/2018 10:34	0000	0000	1	1	
COL-MWS-4008549	11/8/2018 10:53	0000	0000	1	1	
COL-MWS-4008546	11/8/2018 11:01	0000	0000	1	1	
COL-MWS-4008545	11/8/2018 11:05	0000	0000	1	1	
COL-MWS-4008544	11/8/2018 11:11	0000	0000	1	1	
COL-MWS-4005025	11/8/2018 11:19	0000	0000	1	1	
COL-MWS-4005026	11/8/2018 11:26	0000	0000	1	1	
COL-MWS-4005027	11/8/2018 11:34	0000	0000	1	1	
COL-MWS-4005028	11/8/2018 11:39	0000	0000	1	1	
COL-MWS-4005029	11/8/2018 11:46	0000	0000	1	1	
COL-MWS-4005024	11/8/2018 11:50	0000	0000	1	1	
COL-MWS-4005023	11/8/2018 11:56	0000	0000	1	1	
COL-MWS-4005022	11/8/2018 12:01	0000	0000	1	1	
COL-MWS-4013235	11/8/2018 12:12	0000	0000	1	1	
COL-MWS-4013236	11/8/2018 12:18	0000	0000	1	1	
COL-MWS-4013237	11/8/2018 12:22	0000	0000	1	1	
COL-MWS-4013233	11/8/2018 12:27	0000	0000	1	1	
COL-MWS-4013232	11/8/2018 12:33	0000	0000	1	1	
COL-MWS-4013231	11/8/2018 12:39	0000	0000	1	1	
COL-MWS-4008987	11/8/2018 13:06	0000	0000	1	1	
COL-MWS-4008986	11/8/2018 13:15	0000	0000	1	1	
COL-MWS-4008985	11/8/2018 13:20	0000	0000	1	1	
COL-MWS-4008984	11/8/2018 13:27	0000	0000	1	1	
COL-MWS-4004953	11/8/2018 13:38	0000	0000	1	1	
COL-MWS-4004952	11/8/2018 13:42	0000	0000	1	1	
COL-MWS-4004951	11/8/2018 13:46	0000	0000	1	1	
COL-MWS-4004950	11/8/2018 13:51	0000	0000	1	1	
COL-MWS-4009134	11/8/2018 13:58	0000	2100	1	2	Obstacle construction debris - debris on bench.
COL-MWS-4009062	11/9/2018 07:40	0000	0000	1	1	
COL-MWS-4009063	11/9/2018 07:51	0000	0000	1	1	
COL-MWS-4009067	11/9/2018 07:59	0000	0000	1	1	
COL-MWS-4009066	11/9/2018 08:05	0000	0000	1	1	
COL-MWS-4009064	11/9/2018 08:11	0000	0000	1	1	
COL-MWS-4009065	11/9/2018 08:15	0000	0000	1	1	
COL-MWS-4009070	11/9/2018 08:25	0000	0000	1	1	
COL-MWS-4009071	11/9/2018 08:31	0000	0000	1	1	
COL-MWS-4009072	11/9/2018 08:36	0000	0000	1	1	
COL-MWS-4009073	11/9/2018 08:43	0000	0000	1	1	
COL-MWS-4009074	11/9/2018 08:49	0000	0000	1	1	
COL-MWS-4009075	11/9/2018 08:57	0000	0000	1	1	
COL-MWS-4009033	11/9/2018 09:03	0000	0000	1	1	
COL-MWS-4009032	11/9/2018 09:10	0000	0000	1	1	
COL-MWS-4009036	11/9/2018 09:16	0000	0000	1	1	
COL-MWS-4009035	11/9/2018 09:28	0000	0000	1	1	
COL-MWS-4009038	11/9/2018 09:39	0000	0000	1	1	
COL-MWS-4009037	11/9/2018 09:44	0000	0000	1	1	
COL-MWS-4009040	11/9/2018 09:50	0000	0000	1	1	
COL-MWS-4009039	11/9/2018 09:54	0000	0000	1	1	
COL-MWS-4009029	11/9/2018 09:59	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4009030	11/9/2018 10:04	0000	0000	1	1	
COL-MWS-4009031	11/9/2018 10:10	0000	2100	1	2	Obstacle construction debris - debris on bench.
COL-MWS-4009024	11/9/2018 10:18	0000	0000	1	1	
COL-MWS-4009023	11/9/2018 10:32	0000	0000	1	1	
COL-MWS-4009235	11/9/2018 11:10	0000	0000	1	1	
COL-MWS-4009233	11/9/2018 11:15	0000	0000	1	1	
COL-MWS-4009234	11/9/2018 11:23	0000	0000	1	1	
COL-MWS-4009176	11/9/2018 11:28	0000	0000	1	1	
COL-MWS-4009177	11/9/2018 11:34	0000	0000	1	1	
COL-MWS-4009178	11/9/2018 11:40	0000	0000	1	1	
COL-MWS-4009180	11/9/2018 11:45	0000	0000	1	1	
COL-MWS-4009181	11/9/2018 11:50	0000	0000	1	1	
COL-MWS-4009182	11/9/2018 11:55	0000	0000	1	1	
COL-MWS-4009184	11/9/2018 12:00	0000	0000	1	1	
COL-MWS-4009185	11/9/2018 12:05	0000	0000	1	1	
COL-MWS-4009179	11/9/2018 12:14	0000	0000	1	1	
COL-MWS-4009171	11/9/2018 12:18	0000	0000	1	1	
COL-MWS-4009172	11/9/2018 12:26	0000	0000	1	1	
COL-MWS-4009170	11/9/2018 12:34	0000	0000	1	1	
COL-MWS-4005673	11/9/2018 13:52	0000	0000	1	1	
COL-MWS-4000555	11/9/2018 13:57	0000	0000	1	1	
COL-MWS-4000554	11/9/2018 14:00	0000	0000	1	1	
COL-MWS-4000569	11/9/2018 14:04	0000	0000	1	1	
COL-MWS-4000568	11/9/2018 14:07	0000	0000	1	1	
COL-MWS-4000567	11/9/2018 14:11	0000	0000	1	1	
COL-MWS-4005685	11/9/2018 14:14	0000	2100	1	2	Obstacle other - stick on bench.
COL-MWS-4005686	11/9/2018 14:18	0000	0000	1	1	
COL-MWS-4005687	11/9/2018 14:21	0000	0000	1	1	
COL-MWS-4005688	11/15/2018 07:29	0000	2100	1	2	Obstacle other - metal rod on bench.
COL-MWS-4005689	11/15/2018 07:36	0000	0000	1	1	
COL-MWS-4005691	11/15/2018 07:54	0000	0000	1	1	
COL-MWS-4005692	11/15/2018 07:58	0000	0000	1	1	
COL-MWS-4005690	11/15/2018 08:05	0000	0000	1	1	
COL-MWS-4005693	11/15/2018 08:11	0000	0000	1	1	
COL-MWS-4005674	11/15/2018 08:16	0000	0000	1	1	
COL-MWS-4005675	11/15/2018 08:21	0000	0000	1	1	
COL-MWS-4005672	11/15/2018 08:26	0000	3121	1	3	Deposits attached grease - grease in channel(s).
COL-MWS-4005671	11/15/2018 08:33	0000	0000	1	1	
COL-MWS-4005670	11/15/2018 08:38	0000	2100	1	2	Deposits attached grease - grease in channel.
COL-MWS-4005669	11/15/2018 08:44	0000	0000	1	1	
COL-MWS-4000598	11/15/2018 08:49	0000	0000	1	1	
COL-MWS-4000597	11/15/2018 08:57	0000	0000	1	1	
COL-MWS-4005683	11/15/2018 09:03	0000	0000	1	1	
COL-MWS-4005684	11/15/2018 09:11	0000	0000	1	1	
COL-MWS-4000599	11/15/2018 09:17	0000	0000	1	1	
COL-MWS-4000600	11/15/2018 09:22	0000	0000	1	1	
COL-MWS-4005677	11/15/2018 09:31	0000	0000	1	1	
COL-MWS-4005661	11/15/2018 09:37	0000	2100	1	2	Deposits attached ragging - rags in channel.
COL-MWS-4005664	11/15/2018 09:46	0000	0000	1	1	
COL-MWS-4005678	11/15/2018 09:52	0000	0000	1	1	
COL-MWS-4005662	11/15/2018 10:02	0000	0000	1	1	
COL-MWS-4005663	11/15/2018 10:06	0000	0000	1	1	
COL-MWS-4005658	11/15/2018 10:11	0000	0000	1	1	
COL-MWS-4005659	11/15/2018 10:17	0000	0000	1	1	
COL-MWS-4005660	11/15/2018 10:20	0000	0000	1	1	
COL-MWS-4005656	11/15/2018 10:28	0000	2100	1	2	Obstacle rocks - rocks in channel.

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4005657	11/15/2018 10:33	0000	0000	1	1	
COL-MWS-4005654	11/15/2018 10:43	0000	0000	1	1	
COL-MWS-4005655	11/15/2018 10:47	0000	0000	1	1	
COL-MWS-4005679	11/15/2018 10:53	0000	0000	1	1	
COL-MWS-4005680	11/15/2018 10:59	0000	0000	1	1	
COL-MWS-4005681	11/15/2018 11:05	0000	0000	1	1	
COL-MWS-4005666	11/15/2018 11:09	0000	4121	1	4	Deposits attached Encrustation - Encrustation on bench and channel.
COL-MWS-4005646	11/15/2018 11:17	0000	0000	1	1	
COL-MWS-4005665	11/15/2018 11:23	0000	3100	1	3	Infiltration Dripper - Water dripping through wall interior.
COL-MWS-4005630	11/15/2018 11:32	0000	0000	1	1	
COL-MWS-4005631	11/15/2018 11:37	0000	0000	1	1	
COL-MWS-4005632	11/15/2018 11:41	0000	3100	1	3	Deposits settled gravel - gravel on channel.
COL-MWS-4005645	11/15/2018 11:50	0000	2100	1	2	Deposits attached ragging - rags in channel.
COL-MWS-4005642	11/15/2018 11:55	0000	0000	1	1	
COL-MWS-4005641	11/15/2018 12:00	0000	0000	1	1	
COL-MWS-4005644	11/15/2018 12:06	0000	3100	1	3	Deposits attached ragging - rags in channel. Rags blocking flow.
COL-MWS-4005643	11/15/2018 12:11	0000	0000	1	1	
COL-MWS-4000590	11/15/2018 13:43	0000	0000	1	1	
COL-MWS-4000591	11/15/2018 13:51	0000	0000	1	1	
COL-MWS-4005624	11/15/2018 13:57	0000	0000	1	1	
COL-MWS-4005623	11/15/2018 14:03	0000	0000	1	1	
COL-MWS-4005625	11/15/2018 14:08	0000	0000	1	1	
COL-MWS-4005626	11/15/2018 14:13	0000	0000	1	1	
COL-MWS-4005627	11/15/2018 14:18	0000	2100	1	2	Deposits attached Encrustation - Encrustation in channel.
COL-MWS-4005628	11/15/2018 14:24	0000	0000	1	1	
COL-MWS-4008654	11/16/2018 07:27	0000	0000	1	1	
COL-MWS-4008655	11/16/2018 07:32	0000	0000	1	1	
COL-MWS-4008651	11/16/2018 07:37	0000	0000	1	1	
COL-MWS-4008656	11/16/2018 07:43	0000	0000	1	1	
COL-MWS-4008657	11/16/2018 07:47	0000	0000	1	1	
COL-MWS-4008664	11/16/2018 07:52	0000	0000	1	1	
COL-MWS-4008658	11/16/2018 07:56	0000	0000	1	1	
COL-MWS-4008662	11/16/2018 08:02	0000	2100	1	2	Obstacle construction debris - concrete slab on bench.
COL-MWS-4008661	11/16/2018 08:08	0000	0000	1	1	
COL-MWS-4008660	11/16/2018 08:14	0000	0000	1	1	
COL-MWS-4008650	11/16/2018 08:21	0000	0000	1	1	
COL-MWS-4008659	11/16/2018 08:27	0000	0000	1	1	
COL-MWS-4012356	11/16/2018 08:39	0000	0000	1	1	
COL-MWS-4005667	11/16/2018 08:47	0000	0000	1	1	
COL-MWS-4005668	11/16/2018 09:01	0000	0000	1	1	
COL-MWS-4004944	11/16/2018 09:06	0000	0000	1	1	
COL-MWS-4004945	11/16/2018 09:11	0000	0000	1	1	
COL-MWS-4004943	11/16/2018 09:17	0000	0000	1	1	
COL-MWS-4008568	11/16/2018 09:24	0000	0000	1	1	
COL-MWS-4004946	11/16/2018 09:32	0000	0000	1	1	
COL-MWS-4005682	11/16/2018 09:39	0000	0000	1	1	
COL-MWS-4005065	11/16/2018 09:56	0000	0000	1	1	
COL-MWS-4005066	11/16/2018 10:04	0000	0000	1	1	
COL-MWS-4005067	11/16/2018 10:09	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4005063	11/16/2018 10:14	0000	3100	1	3	Obstacle construction debris - debris in channel.
COL-MWS-4005068	11/16/2018 10:21	0000	2200	1	2	Deposits attached Encrustation - Encrustation in channel.
COL-MWS-4005077	11/16/2018 10:29	0000	0000	1	1	
COL-MWS-4005074	11/16/2018 10:36	0000	0000	1	1	
COL-MWS-4005071	11/16/2018 10:46	0000	0000	1	1	
COL-MWS-4005062	11/16/2018 10:54	0000	0000	1	1	
COL-MWS-4005060	11/16/2018 11:00	0000	0000	1	1	
COL-MWS-4005059	11/16/2018 11:06	0000	0000	1	1	
COL-MWS-4005056	11/16/2018 11:10	0000	0000	1	1	
COL-MWS-4005053	11/16/2018 11:16	0000	0000	1	1	
COL-MWS-4007919	11/16/2018 11:39	0000	0000	1	1	
COL-MWS-4007920	11/16/2018 11:44	0000	0000	1	1	
COL-MWS-4007921	11/16/2018 11:48	0000	0000	1	1	
COL-MWS-4007922	11/16/2018 11:52	0000	0000	1	1	
COL-MWS-4007923	11/16/2018 11:57	0000	0000	1	1	
COL-MWS-4007974	11/16/2018 12:04	0000	0000	1	1	
COL-MWS-4007973	11/16/2018 12:10	0000	0000	1	1	
COL-MWS-4007972	11/16/2018 12:16	0000	0000	1	1	
COL-MWS-4007970	11/16/2018 12:23	0000	0000	1	1	
COL-MWS-4007971	11/16/2018 12:29	0000	0000	1	1	
COL-MWS-4007968	11/16/2018 12:33	0000	0000	1	1	
COL-MWS-4007928	11/16/2018 12:43	0000	0000	1	1	
COL-MWS-4007929	11/16/2018 12:48	0000	1100	1	1	Vermin cockroach - on wall interior.
COL-MWS-4007930	11/16/2018 12:56	0000	0000	1	1	
COL-MWS-4007931	11/16/2018 13:02	0000	2100	1	2	Obstacle construction debris - concrete in channel.
COL-MWS-4007932	11/16/2018 13:10	0000	2100	1	2	Deposits attached ragging - rags in channel.
COL-MWS-5005505	11/20/2018 07:39	0000	0000	1	1	
COL-MWS-5012963	11/20/2018 07:49	0000	0000	1	1	
COL-MWS-5005507	11/20/2018 07:55	0000	0000	1	1	
COL-MWS-5005508	11/20/2018 08:02	3100	0000	3	1	Hole - Hole on bench.
COL-MWS-5005506	11/20/2018 08:08	0000	0000	1	1	
COL-MWS-5011624	11/20/2018 08:17	0000	0000	1	1	
COL-MWS-5011637	11/20/2018 08:23	0000	0000	1	1	
COL-MWS-5011644	11/20/2018 08:31	0000	0000	1	1	
COL-MWS-5011649	11/20/2018 08:36	0000	0000	1	1	
COL-MWS-5011648	11/20/2018 08:43	3100	0000	3	1	Hole - Hole in channel.
COL-MWS-5011643	11/20/2018 09:09	0000	0000	1	1	
COL-MWS-5011642	11/20/2018 09:20	0000	0000	1	1	
COL-MWS-5011635	11/20/2018 09:33	0000	2100	1	2	Deposits attached ragging - rags in channel.
COL-MWS-5011636	11/20/2018 09:44	0000	0000	1	1	
COL-MWS-5011633	11/20/2018 09:50	0000	0000	1	1	
COL-MWS-5011634	11/20/2018 09:59	0000	0000	1	1	
COL-MWS-5012955	11/20/2018 10:10	0000	0000	1	1	
COL-MWS-5012956	11/20/2018 10:19	0000	0000	1	1	
COL-MWS-5005502	11/20/2018 10:32	0000	0000	1	1	
COL-MWS-5012917	11/20/2018 10:36	0000	0000	1	1	
COL-MWS-5012916	11/20/2018 10:42	0000	0000	1	1	
COL-MWS-5012915	11/20/2018 10:46	0000	0000	1	1	
COL-MWS-5012914	11/20/2018 10:50	0000	0000	1	1	
COL-MWS-5012913	11/20/2018 10:56	0000	0000	1	1	
COL-MWS-5012912	11/20/2018 11:00	0000	2100	1	2	Deposits settled gravel - gravel in channel.

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-5012920	11/20/2018 11:07	0000	0000	1	1	
COL-MWS-5010529	11/20/2018 11:12	0000	0000	1	1	
COL-MWS-5010530	11/20/2018 11:19	0000	0000	1	1	
COL-MWS-5010531	11/20/2018 11:23	0000	0000	1	1	
COL-MWS-5010532	11/20/2018 11:26	0000	0000	1	1	
COL-MWS-5010533	11/20/2018 11:30	0000	0000	1	1	
COL-MWS-5010534	11/20/2018 11:40	0000	0000	1	1	
COL-MWS-5010535	11/20/2018 11:43	0000	0000	1	1	
COL-MWS-5010555	11/20/2018 11:50	0000	0000	1	1	
COL-MWS-5010556	11/20/2018 11:53	0000	0000	1	1	
COL-MWS-5010557	11/20/2018 11:59	0000	0000	1	1	
COL-MWS-5010558	11/20/2018 12:04	0000	0000	1	1	
COL-MWS-5010559	11/20/2018 12:11	2100	0000	2	1	Surface spalling other - corrosion in channel.
COL-MWS-5010560	11/20/2018 12:18	0000	0000	1	1	
COL-MWS-5015089	11/20/2018 12:24	0000	0000	1	1	
COL-MWS-5005501	11/20/2018 12:36	0000	0000	1	1	
COL-MWS-5012911	11/20/2018 12:41	0000	0000	1	1	
COL-MWS-5012910	11/20/2018 13:17	0000	0000	1	1	
COL-MWS-5012909	11/20/2018 13:22	0000	0000	1	1	
COL-MWS-5012908	11/20/2018 13:29	0000	0000	1	1	
COL-MWS-5012907	11/20/2018 13:34	0000	0000	1	1	
COL-MWS-5012906	11/20/2018 13:37	0000	0000	1	1	
COL-MWS-5010528	11/20/2018 13:50	0000	2100	1	2	Surface other - corrosion on bench. Deposits settled gravel - gravel in channel.
COL-MWS-5010513	11/20/2018 13:57	0000	0000	1	1	
COL-MWS-5010521	11/20/2018 14:08	0000	3121	1	3	Deposits attached ragging - rags in channel. Obstacle pipe material - piece of VCP pipe in channel.
COL-MWS-4007194	12/21/2018 07:36	0000	0000	1	1	
COL-MWS-4007193	12/21/2018 07:51	0000	0000	1	1	
COL-MWS-4002840	12/21/2018 07:57	0000	0000	1	1	
COL-MWS-4002839	12/21/2018 08:03	0000	0000	1	1	
COL-MWS-4002833	12/21/2018 08:08	0000	0000	1	1	
COL-MWS-4002834	12/21/2018 08:15	0000	0000	1	1	
COL-MWS-4002835	12/21/2018 08:27	0000	0000	1	1	
COL-MWS-4002836	12/21/2018 08:34	0000	0000	1	1	
COL-MWS-4002837	12/21/2018 08:41	0000	0000	1	1	
COL-MWS-4002838	12/21/2018 08:47	0000	0000	1	1	
COL-MWS-4007188	12/21/2018 08:57	0000	0000	1	1	
COL-MWS-4002822	12/21/2018 09:05	0000	0000	1	1	
COL-MWS-4002821	12/21/2018 09:11	0000	0000	1	1	
COL-MWS-4007187	12/21/2018 09:17	0000	0000	1	1	
COL-MWS-4002801	12/21/2018 09:26	0000	0000	1	1	
COL-MWS-4002820	12/21/2018 09:36	0000	0000	1	1	
COL-MWS-4002819	12/21/2018 09:43	0000	0000	1	1	
COL-MWS-4002818	12/21/2018 09:48	0000	0000	1	1	
COL-MWS-4002817	12/21/2018 09:59	0000	0000	1	1	
COL-MWS-4002816	12/21/2018 10:03	0000	0000	1	1	
COL-MWS-4002813	12/21/2018 10:10	0000	0000	1	1	
COL-MWS-4007184	12/21/2018 10:23	0000	0000	1	1	
COL-MWS-4007185	12/21/2018 10:29	0000	0000	1	1	
COL-MWS-4007839	12/21/2018 10:56	0000	0000	1	1	
COL-MWS-4007840	12/21/2018 11:02	0000	0000	1	1	
COL-MWS-4007842	12/21/2018 11:08	0000	0000	1	1	
COL-MWS-4007841	12/21/2018 11:19	0000	0000	1	1	
COL-MWS-4007843	12/21/2018 11:25	0000	0000	1	1	
COL-MWS-4007846	12/21/2018 11:38	0000	0000	1	1	
COL-MWS-4007845	12/21/2018 11:43	0000	0000	1	1	
COL-MWS-4007847	12/21/2018 11:48	0000	0000	1	1	
COL-MWS-5005440	12/21/2018 13:05	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-5005445	12/21/2018 13:12	0000	0000	1	1	
COL-MWS-5005441	12/21/2018 13:17	0000	0000	1	1	
COL-MWS-5011421	12/21/2018 13:21	0000	0000	1	1	
COL-MWS-5011427	12/21/2018 13:25	0000	0000	1	1	
COL-MWS-5011426	12/21/2018 13:31	0000	0000	1	1	
COL-MWS-5011422	12/21/2018 13:35	0000	0000	1	1	
COL-MWS-5011423	12/21/2018 13:41	2100	0000	2	1	Circumferential fracture - wall interior.
COL-MWS-5011424	12/21/2018 13:49	0000	0000	1	1	
COL-MWS-5011380	12/21/2018 13:55	0000	0000	1	1	
COL-MWS-5011387	12/21/2018 14:01	0000	0000	1	1	
COL-MWS-5011386	12/21/2018 14:05	0000	0000	1	1	
COL-MWS-5011388	12/21/2018 14:10	0000	0000	1	1	
COL-MWS-5011381	12/21/2018 14:19	0000	0000	1	1	
COL-MWS-5011382	12/21/2018 14:24	0000	0000	1	1	
COL-MWS-5011383	12/21/2018 14:28	0000	0000	1	1	
COL-MWS-5004303	12/26/2018 07:39	0000	0000	1	1	
COL-MWS-5004322	12/26/2018 07:48	0000	0000	1	1	
COL-MWS-5008298	12/26/2018 07:54	0000	0000	1	1	
COL-MWS-5004321	12/26/2018 08:00	0000	0000	1	1	
COL-MWS-5008296	12/26/2018 08:05	0000	0000	1	1	
COL-MWS-5008297	12/26/2018 08:10	0000	0000	1	1	
COL-MWS-5004317	12/26/2018 08:11	0000	0000	1	1	
COL-MWS-5004320	12/26/2018 08:18	0000	0000	1	1	
COL-MWS-5004316	12/26/2018 08:24	0000	0000	1	1	
COL-MWS-5004313	12/26/2018 08:30	0000	0000	1	1	
COL-MWS-5004315	12/26/2018 08:36	0000	0000	1	1	
COL-MWS-5004314	12/26/2018 08:44	0000	0000	1	1	
COL-MWS-5013466	12/26/2018 08:49	0000	0000	1	1	
COL-MWS-5011275	12/26/2018 08:55	0000	0000	1	1	
COL-MWS-5011276	12/26/2018 09:02	0000	0000	1	1	
COL-MWS-5013465	12/26/2018 09:08	0000	0000	1	1	
COL-MWS-5011277	12/26/2018 09:16	0000	0000	1	1	
COL-MWS-5005431	12/26/2018 09:22	0000	0000	1	1	
COL-MWS-5011278	12/26/2018 09:29	0000	0000	1	1	
COL-MWS-5011266	12/26/2018 09:36	0000	0000	1	1	
COL-MWS-5011262	12/26/2018 09:42	0000	0000	1	1	
COL-MWS-5011263	12/26/2018 09:48	0000	0000	1	1	
COL-MWS-5005434	12/26/2018 10:03	0000	0000	1	1	
COL-MWS-5011261	12/26/2018 10:11	0000	0000	1	1	
COL-MWS-5011264	12/26/2018 10:21	0000	0000	1	1	
COL-MWS-5005429	12/26/2018 10:26	0000	0000	1	1	
COL-MWS-5005428	12/26/2018 10:35	0000	0000	1	1	
COL-MWS-5005427	12/26/2018 10:41	0000	0000	1	1	
COL-MWS-5005426	12/26/2018 10:48	0000	0000	1	1	
COL-MWS-5005531	12/26/2018 10:56	0000	0000	1	1	
COL-MWS-5005529	12/26/2018 11:05	0000	0000	1	1	
COL-MWS-5005530	12/26/2018 11:12	0000	0000	1	1	
COL-MWS-5014271	12/26/2018 11:18	0000	0000	1	1	
COL-MWS-5015246	12/26/2018 11:23	0000	0000	1	1	
COL-MWS-5011265	12/26/2018 11:30	0000	0000	1	1	
COL-MWS-5004940	12/26/2018 11:37	0000	0000	1	1	
COL-MWS-5013460	12/26/2018 11:43	0000	0000	1	1	
COL-MWS-5004310	12/26/2018 11:55	0000	0000	1	1	
COL-MWS-5005430	12/27/2018 07:18	0000	0000	1	1	
COL-MWS-5008295	12/27/2018 07:23	0000	0000	1	1	
COL-MWS-5004311	12/27/2018 07:28	0000	0000	1	1	
COL-MWS-5004312	12/27/2018 07:35	0000	0000	1	1	
COL-MWS-5004300	12/27/2018 07:42	0000	2100	1	2	Obstacle other - stick across bench.
COL-MWS-5004301	12/27/2018 07:48	0000	0000	1	1	
COL-MWS-5004302	12/27/2018 07:53	0000	0000	1	1	
COL-MWS-5004304	12/27/2018 07:59	0000	0000	1	1	
COL-MWS-5004305	12/27/2018 08:03	0000	0000	1	1	
COL-MWS-5004299	12/27/2018 08:09	0000	0000	1	1	
COL-MWS-5004888	12/27/2018 08:14	0000	0000	1	1	
COL-MWS-5004889	12/27/2018 08:18	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-5004890	12/27/2018 08:22	0000	0000	1	1	
COL-MWS-5004872	12/27/2018 08:36	0000	0000	1	1	
COL-MWS-5004352	12/27/2018 08:41	0000	0000	1	1	
COL-MWS-5004878	12/27/2018 08:45	0000	0000	1	1	
COL-MWS-5011481	12/27/2018 08:52	0000	0000	1	1	
COL-MWS-5004879	12/27/2018 08:57	0000	0000	1	1	
COL-MWS-5000459	12/27/2018 09:07	0000	0000	1	1	
COL-MWS-5000458	12/27/2018 09:12	0000	0000	1	1	
COL-MWS-5004349	12/27/2018 09:22	0000	0000	1	1	
COL-MWS-5004350	12/27/2018 09:33	0000	0000	1	1	
COL-MWS-5004351	12/27/2018 09:38	0000	0000	1	1	
COL-MWS-5008293	12/27/2018 09:45	0000	0000	1	1	
COL-MWS-5004855	12/27/2018 10:14	0000	0000	1	1	
COL-MWS-5004856	12/27/2018 10:18	0000	0000	1	1	
COL-MWS-5004857	12/27/2018 10:21	0000	0000	1	1	
COL-MWS-5004853	12/27/2018 10:27	0000	0000	1	1	
COL-MWS-5004924	12/27/2018 10:37	0000	0000	1	1	
COL-MWS-5004925	12/27/2018 10:41	0000	0000	1	1	
COL-MWS-5004927	12/27/2018 10:46	0000	0000	1	1	
COL-MWS-5004926	12/27/2018 10:50	0000	0000	1	1	
COL-MWS-5004931	12/27/2018 10:55	0000	0000	1	1	
COL-MWS-5004930	12/27/2018 10:59	0000	0000	1	1	
COL-MWS-5004932	12/27/2018 11:05	0000	0000	1	1	
COL-MWS-5004928	12/27/2018 11:11	0000	0000	1	1	
COL-MWS-5004933	12/27/2018 11:16	0000	0000	1	1	
COL-MWS-5004934	12/27/2018 11:19	0000	0000	1	1	
COL-MWS-5004935	12/27/2018 11:24	0000	0000	1	1	
COL-MWS-5004923	12/27/2018 11:28	0000	0000	1	1	
COL-MWS-5004772	12/27/2018 11:40	0000	3100	1	3	Deposits ingressed gravel - gravel in channel.
COL-MWS-5004781	12/27/2018 11:49	0000	0000	1	1	
COL-MWS-5008510	12/27/2018 11:52	0000	0000	1	1	
COL-MWS-5004779	12/27/2018 11:57	0000	0000	1	1	
COL-MWS-5004780	12/27/2018 12:07	0000	0000	1	1	
COL-MWS-4008981	12/27/2018 13:39	0000	0000	1	1	
COL-MWS-4008980	12/27/2018 13:45	0000	0000	1	1	
COL-MWS-4008979	12/27/2018 13:49	0000	0000	1	1	
COL-MWS-4008978	12/27/2018 13:53	0000	0000	1	1	
COL-MWS-4008977	12/27/2018 13:59	0000	0000	1	1	
COL-MWS-6000523	12/28/2018 07:34	0000	0000	1	1	
COL-MWS-6008420	12/28/2018 07:44	0000	0000	1	1	
COL-MWS-6008419	12/28/2018 07:56	0000	3100	1	3	Deposits settled gravel - gravel in bench.
COL-MWS-6008498	12/28/2018 08:06	0000	0000	1	1	
COL-MWS-6008481	12/28/2018 08:13	0000	0000	1	1	
COL-MWS-6008413	12/28/2018 08:17	0000	0000	1	1	
COL-MWS-6008412	12/28/2018 08:24	0000	0000	1	1	
COL-MWS-6008411	12/28/2018 08:31	0000	0000	1	1	
COL-MWS-6008409	12/28/2018 08:36	0000	0000	1	1	
COL-MWS-6008410	12/28/2018 08:42	0000	0000	1	1	
COL-MWS-6008408	12/28/2018 08:47	0000	0000	1	1	
COL-MWS-6008407	12/28/2018 08:53	0000	0000	1	1	
COL-MWS-6008406	12/28/2018 09:00	0000	0000	1	1	
COL-MWS-6000574	12/28/2018 09:06	0000	0000	1	1	
COL-MWS-6000573	12/28/2018 09:11	0000	0000	1	1	
COL-MWS-6000572	12/28/2018 09:16	0000	0000	1	1	
COL-MWS-6008480	12/28/2018 09:25	0000	0000	1	1	
COL-MWS-6008421	12/28/2018 09:31	0000	0000	1	1	
COL-MWS-6008479	12/28/2018 09:37	0000	0000	1	1	
COL-MWS-6005618	12/28/2018 09:46	0000	0000	1	1	
COL-MWS-6005617	12/28/2018 09:52	0000	0000	1	1	
COL-MWS-6005616	12/28/2018 09:58	0000	0000	1	1	
COL-MWS-6005615	12/28/2018 10:03	0000	0000	1	1	
COL-MWS-6005614	12/28/2018 10:08	0000	0000	1	1	
COL-MWS-6000582	12/28/2018 10:15	0000	0000	1	1	
COL-MWS-6005611	12/28/2018 10:22	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-6000583	12/28/2018 10:28	0000	0000	1	1	
COL-MWS-6004801	12/28/2018 10:44	0000	0000	1	1	
COL-MWS-6008521	12/28/2018 10:51	0000	0000	1	1	
COL-MWS-6004800	12/28/2018 10:59	0000	0000	1	1	
COL-MWS-6008522	12/28/2018 11:09	0000	0000	1	1	
COL-MWS-6008520	12/28/2018 11:17	0000	2100	1	2	Deposits settled gravel - gravel in channel.
COL-MWS-6012322	12/28/2018 11:32	0000	0000	1	1	
COL-MWS-6008515	12/28/2018 11:39	0000	0000	1	1	
COL-MWS-6008516	12/28/2018 11:46	0000	0000	1	1	
COL-MWS-6008514	12/28/2018 11:53	0000	2100	1	2	Deposits settled other - rope on channel.
COL-MWS-5007722	12/28/2018 12:34	0000	0000	1	1	
COL-MWS-5007726	12/28/2018 12:39	0000	0000	1	1	
COL-MWS-5007727	12/28/2018 12:44	0000	0000	1	1	
COL-MWS-5007728	12/28/2018 12:48	0000	0000	1	1	
COL-MWS-5007724	12/28/2018 12:51	0000	0000	1	1	
COL-MWS-5007723	12/28/2018 12:56	0000	0000	1	1	
COL-MWS-5007729	12/28/2018 13:00	0000	0000	1	1	
COL-MWS-5007720	12/28/2018 13:06	0000	0000	1	1	
COL-MWS-5015825	12/28/2018 13:13	0000	0000	1	1	
COL-MWS-5015827	12/28/2018 13:20	0000	0000	1	1	
COL-MWS-5015881	12/28/2018 13:27	0000	0000	1	1	
COL-MWS-5006881	12/28/2018 13:32	0000	0000	1	1	
COL-MWS-5015824	12/28/2018 13:38	0000	0000	1	1	
COL-MWS-5015823	12/28/2018 13:45	0000	2100	1	2	Deposits settled other - brick on channel.
COL-MWS-5010548	1/2/2019 07:22	0000	0000	1	1	
COL-MWS-5010549	1/2/2019 07:30	0000	0000	1	1	
COL-MWS-5010550	1/2/2019 07:34	0000	0000	1	1	
COL-MWS-5010553	1/2/2019 07:39	0000	0000	1	1	
COL-MWS-5010552	1/2/2019 07:42	0000	0000	1	1	
COL-MWS-5010551	1/2/2019 07:46	0000	0000	1	1	
COL-MWS-5010556	1/2/2019 07:53	0000	0000	1	1	
COL-MWS-5010554	1/2/2019 08:02	0000	0000	1	1	
COL-MWS-5013026	1/2/2019 08:07	0000	0000	1	1	
COL-MWS-5010544	1/2/2019 08:16	0000	0000	1	1	
COL-MWS-5010543	1/2/2019 08:22	0000	0000	1	1	
COL-MWS-5010545	1/2/2019 08:26	0000	0000	1	1	
COL-MWS-5010542	1/2/2019 08:32	0000	0000	1	1	
COL-MWS-5010481	1/2/2019 08:42	0000	0000	1	1	
COL-MWS-5010541	1/2/2019 08:48	0000	0000	1	1	
COL-MWS-5013025	1/2/2019 08:52	0000	0000	1	1	
COL-MWS-5010540	1/2/2019 08:58	0000	0000	1	1	
COL-MWS-5010482	1/2/2019 09:04	0000	0000	1	1	
COL-MWS-5015822	1/2/2019 09:15	0000	0000	1	1	
COL-MWS-5015821	1/2/2019 09:20	0000	0000	1	1	
COL-MWS-5015880	1/2/2019 09:24	0000	0000	1	1	
COL-MWS-5015820	1/2/2019 09:28	0000	0000	1	1	
COL-MWS-5015819	1/2/2019 09:32	0000	0000	1	1	
COL-MWS-5007712	1/2/2019 09:36	0000	0000	1	1	
COL-MWS-5007713	1/2/2019 09:41	0000	0000	1	1	
COL-MWS-5007714	1/2/2019 09:45	0000	0000	1	1	
COL-MWS-5051828	1/2/2019 09:50	0000	0000	1	1	
COL-MWS-5015829	1/2/2019 09:54	0000	0000	1	1	
COL-MWS-5007716	1/2/2019 09:59	0000	0000	1	1	
COL-MWS-5007715	1/2/2019 10:03	0000	0000	1	1	
COL-MWS-5015830	1/2/2019 10:08	0000	0000	1	1	
COL-MWS-5007717	1/2/2019 10:11	0000	0000	1	1	
COL-MWS-5007711	1/2/2019 10:18	0000	0000	1	1	
COL-MWS-5003535	1/2/2019 10:29	0000	0000	1	1	
COL-MWS-5003534	1/2/2019 10:36	0000	0000	1	1	
COL-MWS-5003533	1/2/2019 10:40	0000	2100	1	2	Deposits settled gravel - gravel on bench.

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-5003532	1/2/2019 10:45	0000	0000	1	1	
COL-MWS-5003531	1/2/2019 10:49	0000	0000	1	1	
COL-MWS-5003529	1/2/2019 10:54	3100	0000	3	1	Lining failure blistered - wall interior.
COL-MWS-5003530	1/2/2019 11:00	3100	0000	3	1	Lining failure blistered - wall interior.
COL-MWS-5003528	1/2/2019 11:06	0000	0000	1	1	
COL-MWS-5003527	1/2/2019 11:11	0000	0000	1	1	
COL-MWS-5011036	1/2/2019 12:12	0000	0000	1	1	
COL-MWS-5011042	1/2/2019 12:17	0000	0000	1	1	
COL-MWS-5013376	1/2/2019 12:24	0000	0000	1	1	
COL-MWS-5007663	1/2/2019 12:35	0000	0000	1	1	
COL-MWS-5007665	1/2/2019 12:41	0000	0000	1	1	
COL-MWS-5003460	1/2/2019 12:48	0000	0000	1	1	
COL-MWS-5003459	1/2/2019 12:53	0000	0000	1	1	
COL-MWS-5003471	1/2/2019 12:59	0000	0000	1	1	
COL-MWS-5003470	1/2/2019 13:03	0000	0000	1	1	
COL-MWS-5010466	1/2/2019 13:10	0000	0000	1	1	
COL-MWS-5010467	1/2/2019 13:15	0000	0000	1	1	
COL-MWS-5015298	1/2/2019 13:21	0000	0000	1	1	
COL-MWS-5003462	1/2/2019 13:27	0000	0000	1	1	
COL-MWS-5003588	1/2/2019 13:35	0000	0000	1	1	
COL-MWS-6002467	1/3/2019 07:37	0000	0000	1	1	
COL-MWS-6002468	1/3/2019 07:46	0000	0000	1	1	
COL-MWS-6000264	1/3/2019 07:56	0000	0000	1	1	
COL-MWS-6000263	1/3/2019 08:03	0000	0000	1	1	
COL-MWS-6000262	1/3/2019 08:12	0000	0000	1	1	
COL-MWS-6011003	1/3/2019 08:23	0000	0000	1	1	
COL-MWS-6011009	1/3/2019 08:31	0000	0000	1	1	
COL-MWS-6011006	1/3/2019 08:40	0000	0000	1	1	
COL-MWS-6007534	1/3/2019 08:51	0000	0000	1	1	
COL-MWS-6003373	1/3/2019 09:01	0000	0000	1	1	
COL-MWS-6003372	1/3/2019 09:09	1100	0000	1	1	Crack circumferential - crack between bench and wall.
COL-MWS-6000375	1/3/2019 09:19	0000	0000	1	1	
COL-MWS-6002414	1/3/2019 09:29	0000	0000	1	1	
COL-MWS-6002415	1/3/2019 09:37	0000	0000	1	1	
COL-MWS-6002416	1/3/2019 09:44	0000	0000	1	1	
COL-MWS-6002420	1/3/2019 09:52	0000	0000	1	1	
COL-MWS-6002418	1/3/2019 10:01	0000	0000	1	1	
COL-MWS-6002412	1/3/2019 10:11	0000	0000	1	1	
COL-MWS-6002409	1/3/2019 10:19	0000	0000	1	1	
COL-MWS-6002407	1/3/2019 10:25	0000	0000	1	1	
COL-MWS-6002406	1/3/2019 10:32	0000	0000	1	1	
COL-MWS-6002408	1/3/2019 10:38	0000	0000	1	1	
COL-MWS-6002411	1/3/2019 10:45	0000	0000	1	1	
COL-MWS-6006865	1/3/2019 10:50	0000	0000	1	1	
COL-MWS-6002419	1/3/2019 10:56	0000	0000	1	1	
COL-MWS-6006866	1/3/2019 11:05	0000	0000	1	1	
COL-MWS-6006797	1/3/2019 11:13	0000	0000	1	1	
COL-MWS-6006796	1/3/2019 11:21	0000	0000	1	1	
COL-MWS-6012181	1/3/2019 11:29	0000	0000	1	1	
COL-MWS-6006798	1/3/2019 11:35	0000	5100	1	5	Obstacle thru connection - obstacle clogging lower drop connect - 60%.
COL-MWS-6006781	1/3/2019 11:47	0000	0000	1	1	
COL-MWS-6002401	1/3/2019 11:56	0000	0000	1	1	
COL-MWS-6002402	1/3/2019 12:03	0000	0000	1	1	
COL-MWS-6006805	1/3/2019 12:09	0000	0000	1	1	
COL-MWS-6002400	1/3/2019 12:16	0000	0000	1	1	
COL-MWS-6000256	1/3/2019 12:24	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-6000258	1/3/2019 12:34	5100	0000	5	1	Broken soil visible - broken pipe in channel.
COL-MWS-6000257	1/3/2019 12:43	0000	0000	1	1	
COL-MWS-6000259	1/3/2019 12:52	0000	0000	1	1	
COL-MWS-6002428	1/3/2019 12:59	5100	0000	5	1	Broken soil visible - broken pipe in channel.
COL-MWS-6002478	1/3/2019 13:06	0000	0000	1	1	
COL-MWS-6000261	1/3/2019 13:15	0000	0000	1	1	
COL-MWS-6000260	1/3/2019 13:27	0000	0000	1	1	
COL-MWS-6002404	1/3/2019 13:36	0000	0000	1	1	
COL-MWS-6002403	1/3/2019 13:42	0000	0000	1	1	
COL-MWS-6002490	1/3/2019 13:53	0000	0000	1	1	
COL-MWS-6002491	1/3/2019 14:01	0000	0000	1	1	
COL-MWS-6006878	1/3/2019 14:05	0000	0000	1	1	
COL-MWS-6003436	1/4/2019 07:34	0000	2100	1	2	Obstacle construction debris - metal rod across bench.
COL-MWS-6003437	1/4/2019 07:40	0000	0000	1	1	
COL-MWS-6003435	1/4/2019 07:45	0000	0000	1	1	
COL-MWS-6003428	1/4/2019 07:53	0000	0000	1	1	
COL-MWS-6003429	1/4/2019 07:57	0000	0000	1	1	
COL-MWS-6003432	1/4/2019 08:03	0000	0000	1	1	
COL-MWS-6003434	1/4/2019 08:08	0000	0000	1	1	
COL-MWS-6003433	1/4/2019 08:14	0000	0000	1	1	
COL-MWS-6003431	1/4/2019 08:24	0000	0000	1	1	
COL-MWS-6003430	1/4/2019 08:28	0000	0000	1	1	
COL-MWS-6010925	1/4/2019 08:33	0000	0000	1	1	
COL-MWS-6010926	1/4/2019 08:38	0000	0000	1	1	
COL-MWS-6010936	1/4/2019 08:46	0000	0000	1	1	
COL-MWS-6010935	1/4/2019 08:53	0000	0000	1	1	
COL-MWS-5015083	1/4/2019 09:09	0000	0000	1	1	
COL-MWS-5015080	1/4/2019 09:24	0000	0000	1	1	
COL-MWS-7006853	1/4/2019 10:23	0000	2100	1	2	Obstacle other - sticks on bench.
COL-MWS-7006854	1/4/2019 10:29	0000	0000	1	1	
COL-MWS-7006852	1/4/2019 10:35	0000	0000	1	1	
COL-MWS-7012189	1/4/2019 10:42	0000	0000	1	1	
COL-MWS-7001663	1/4/2019 10:45	0000	0000	1	1	
COL-MWS-7006861	1/4/2019 10:51	0000	0000	1	1	
COL-MWS-7006859	1/4/2019 10:54	0000	0000	1	1	
COL-MWS-7006864	1/4/2019 10:59	0000	0000	1	1	
COL-MWS-7006863	1/4/2019 11:03	0000	0000	1	1	
COL-MWS-7002496	1/4/2019 11:11	0000	0000	1	1	
COL-MWS-7006813	1/4/2019 11:17	0000	0000	1	1	
COL-MWS-7001666	1/4/2019 11:23	0000	0000	1	1	
COL-MWS-7001661	1/4/2019 11:29	0000	0000	1	1	
COL-MWS-7001660	1/4/2019 11:39	0000	0000	1	1	
COL-MWS-7001656	1/4/2019 11:45	0000	0000	1	1	
COL-MWS-7001659	1/4/2019 11:51	0000	0000	1	1	
COL-MWS-7001658	1/4/2019 11:56	0000	0000	1	1	
COL-MWS-7005185	1/4/2019 12:05	0000	0000	1	1	
COL-MWS-7009726	1/4/2019 12:13	0000	0000	1	1	
COL-MWS-7009727	1/4/2019 12:18	0000	0000	1	1	
COL-MWS-7005186	1/4/2019 12:23	0000	0000	1	1	
COL-MWS-7005187	1/4/2019 12:28	0000	0000	1	1	
COL-MWS-7009769	1/4/2019 12:36	0000	0000	1	1	
COL-MWS-7009732	1/4/2019 12:47	0000	0000	1	1	
COL-MWS-7009728	1/4/2019 12:52	0000	0000	1	1	
COL-MWS-7009733	1/4/2019 12:57	0000	0000	1	1	
COL-MWS-7009767	1/4/2019 13:01	0000	0000	1	1	
COL-MWS-7009736	1/4/2019 13:13	0000	0000	1	1	
COL-MWS-7009737	1/4/2019 13:19	0000	0000	1	1	
COL-MWS-7009738	1/4/2019 13:24	0000	0000	1	1	
COL-MWS-7009739	1/4/2019 13:28	0000	0000	1	1	
COL-MWS-7009766	1/4/2019 13:32	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-7012670	1/4/2019 13:38	0000	0000	1	1	
COL-MWS-7009756	1/4/2019 13:47	0000	0000	1	1	
COL-MWS-7009765	1/4/2019 13:54	0000	0000	1	1	
COL-MWS-7001665	1/4/2019 14:05	0000	0000	1	1	
COL-MWS-7009763	1/7/2019 07:32	0000	0000	1	1	
COL-MWS-7001596	1/7/2019 07:39	0000	0000	1	1	
COL-MWS-7009762	1/7/2019 07:47	0000	0000	1	1	
COL-MWS-7009761	1/7/2019 07:53	0000	0000	1	1	
COL-MWS-7001593	1/7/2019 08:01	0000	0000	1	1	
COL-MWS-7001592	1/7/2019 08:09	0000	0000	1	1	
COL-MWS-7001594	1/7/2019 08:16	0000	0000	1	1	
COL-MWS-7012671	1/7/2019 08:26	0000	3100	1	3	Deposits settled fine - silt in channel.
COL-MWS-7012672	1/7/2019 08:41	0000	0000	1	1	
COL-MWS-7012667	1/7/2019 08:46	0000	0000	1	1	
COL-MWS-7012666	1/7/2019 08:52	0000	0000	1	1	
COL-MWS-7012665	1/7/2019 08:58	0000	0000	1	1	
COL-MWS-7012664	1/7/2019 09:02	0000	0000	1	1	
COL-MWS-7009796	1/7/2019 09:06	0000	0000	1	1	
COL-MWS-7009788	1/7/2019 09:10	0000	0000	1	1	
COL-MWS-7009787	1/7/2019 09:14	0000	0000	1	1	
COL-MWS-7009789	1/7/2019 09:18	0000	0000	1	1	
COL-MWS-7009790	1/7/2019 09:23	0000	0000	1	1	
COL-MWS-7009793	1/7/2019 09:27	0000	0000	1	1	
COL-MWS-7009791	1/7/2019 09:32	0000	2100	1	2	Obstacle other - stick and miscellaneous debris on bench.
COL-MWS-7009792	1/7/2019 09:37	0000	2100	1	2	Obstacle other - debris on bench.
COL-MWS-7009794	1/7/2019 09:45	0000	0000	1	1	
COL-MWS-7009795	1/7/2019 09:49	0000	0000	1	1	
COL-MWS-7012669	1/7/2019 09:54	0000	3100	1	3	Deposits settled gravel - debris in abandoned connection.
COL-MWS-7012668	1/7/2019 10:00	0000	0000	1	1	
COL-MWS-7012673	1/7/2019 10:05	0000	0000	1	1	
COL-MWS-7006308	1/7/2019 10:22	0000	0000	1	1	
COL-MWS-7006307	1/7/2019 10:28	0000	0000	1	1	
COL-MWS-7006310	1/7/2019 10:43	0000	0000	1	1	
COL-MWS-7006313	1/7/2019 10:51	0000	0000	1	1	
COL-MWS-7006312	1/7/2019 11:00	0000	0000	1	1	
COL-MWS-7006311	1/7/2019 11:05	0000	0000	1	1	
COL-MWS-7006323	1/7/2019 11:15	0000	2100	1	2	Obstacle thru connection - Ragging.
COL-MWS-7006329	1/7/2019 11:24	0000	0000	1	1	
COL-MWS-7006328	1/7/2019 11:31	0000	0000	1	1	
COL-MWS-7006322	1/7/2019 11:37	0000	0000	1	1	
COL-MWS-7006321	1/7/2019 11:43	0000	0000	1	1	
COL-MWS-7012155	1/7/2019 11:49	0000	0000	1	1	
COL-MWS-7006319	1/7/2019 11:56	0000	0000	1	1	
COL-MWS-7006320	1/7/2019 12:00	0000	0000	1	1	
COL-MWS-7006318	1/7/2019 12:04	0000	0000	1	1	
COL-MWS-7006317	1/7/2019 12:08	0000	0000	1	1	
COL-MWS-7006316	1/7/2019 12:13	0000	0000	1	1	
COL-MWS-7006315	1/7/2019 12:18	0000	0000	1	1	
COL-MWS-7005176	1/7/2019 13:21	0000	0000	1	1	
COL-MWS-7005175	1/7/2019 13:28	0000	0000	1	1	
COL-MWS-7005174	1/7/2019 13:33	0000	0000	1	1	
COL-MWS-7009724	1/7/2019 13:37	0000	0000	1	1	
COL-MWS-7001572	1/7/2019 13:43	0000	0000	1	1	
COL-MWS-7001571	1/7/2019 13:48	0000	0000	1	1	
COL-MWS-7001570	1/7/2019 13:53	0000	0000	1	1	
COL-MWS-7001569	1/7/2019 13:57	0000	0000	1	1	
COL-MWS-7001565	1/7/2019 14:00	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-7001567	1/7/2019 14:04	0000	0000	1	1	
COL-MWS-7001566	1/7/2019 14:07	0000	0000	1	1	
COL-MWS-7001568	1/9/2019 07:42	0000	0000	1	1	
COL-MWS-7006303	1/9/2019 07:52	0000	0000	1	1	
COL-MWS-7006305	1/9/2019 07:56	0000	0000	1	1	
COL-MWS-7006304	1/9/2019 08:01	0000	0000	1	1	
COL-MWS-7010344	1/9/2019 08:06	0000	0000	1	1	
COL-MWS-7001554	1/9/2019 08:14	0000	0000	1	1	
COL-MWS-7001555	1/9/2019 08:20	0000	0000	1	1	
COL-MWS-7001561	1/9/2019 08:25	0000	0000	1	1	
COL-MWS-7001560	1/9/2019 08:32	0000	0000	1	1	
COL-MWS-7001556	1/9/2019 08:41	0000	0000	1	1	
COL-MWS-7001558	1/9/2019 08:45	0000	0000	1	1	
COL-MWS-7001557	1/9/2019 08:49	0000	0000	1	1	
COL-MWS-7006302	1/9/2019 08:53	0000	0000	1	1	
COL-MWS-7001559	1/9/2019 08:57	0000	0000	1	1	
COL-MWS-7010263	1/9/2019 09:02	0000	0000	1	1	
COL-MWS-7010264	1/9/2019 09:11	0000	0000	1	1	
COL-MWS-7010265	1/9/2019 09:30	0000	0000	1	1	
COL-MWS-7010266	1/9/2019 09:36	0000	0000	1	1	
COL-MWS-7010255	1/9/2019 09:40	0000	0000	1	1	
COL-MWS-7010256	1/9/2019 09:44	0000	0000	1	1	
COL-MWS-7010257	1/9/2019 09:49	0000	0000	1	1	
COL-MWS-7010259	1/9/2019 09:53	0000	0000	1	1	
COL-MWS-7010260	1/9/2019 09:59	0000	0000	1	1	
COL-MWS-7010261	1/9/2019 10:03	0000	0000	1	1	
COL-MWS-7002342	1/9/2019 10:18	0000	0000	1	1	
COL-MWS-7002358	1/9/2019 10:23	0000	0000	1	1	
COL-MWS-7002341	1/9/2019 10:26	0000	0000	1	1	
COL-MWS-7002326	1/9/2019 10:32	0000	0000	1	1	
COL-MWS-7002323	1/9/2019 10:37	0000	0000	1	1	
COL-MWS-7002346	1/9/2019 10:43	0000	0000	1	1	
COL-MWS-7002345	1/9/2019 10:49	0000	0000	1	1	
COL-MWS-7002348	1/9/2019 10:54	0000	0000	1	1	
COL-MWS-7003289	1/9/2019 11:08	0000	0000	1	1	
COL-MWS-7003288	1/9/2019 11:13	0000	0000	1	1	
COL-MWS-7003286	1/9/2019 11:15	0000	0000	1	1	
COL-MWS-7003287	1/9/2019 11:20	0000	3100	1	3	Obstacle rocks - rocks on bench.
COL-MWS-7003284	1/9/2019 11:25	0000	0000	1	1	
COL-MWS-7003285	1/9/2019 11:31	0000	0000	1	1	
COL-MWS-7003282	1/9/2019 11:34	0000	0000	1	1	
COL-MWS-7003283	1/9/2019 11:38	0000	0000	1	1	
COL-MWS-7003280	1/9/2019 11:42	0000	0000	1	1	
COL-MWS-7003279	1/9/2019 11:51	0000	0000	1	1	
COL-MWS-7003278	1/9/2019 11:57	0000	0000	1	1	
COL-MWS-7003281	1/9/2019 12:02	0000	0000	1	1	
COL-MWS-7004091	1/9/2019 12:14	0000	0000	1	1	
COL-MWS-7004092	1/9/2019 12:21	0000	0000	1	1	
COL-MWS-7004093	1/9/2019 12:25	0000	0000	1	1	
COL-MWS-7004094	1/9/2019 12:28	0000	0000	1	1	
COL-MWS-7008160	1/9/2019 12:32	0000	0000	1	1	
COL-MWS-7004095	1/9/2019 12:36	0000	0000	1	1	
COL-MWS-7004097	1/9/2019 12:43	0000	0000	1	1	
COL-MWS-7004103	1/9/2019 13:37	0000	0000	1	1	
COL-MWS-7004102	1/9/2019 13:40	0000	0000	1	1	
COL-MWS-7004101	1/9/2019 13:45	0000	0000	1	1	
COL-MWS-7004080	1/9/2019 13:49	0000	2200	1	2	Roots fine barrel - roots in wall inerior.
COL-MWS-7004081	1/9/2019 13:59	0000	0000	1	1	
COL-MWS-7004082	1/9/2019 14:03	0000	0000	1	1	
COL-MWS-7004104	1/9/2019 14:07	0000	0000	1	1	
COL-MWS-7000442	1/10/2019 07:29	0000	0000	1	1	
COL-MWS-7000443	1/10/2019 07:37	0000	0000	1	1	
COL-MWS-7011198	1/10/2019 08:00	0000	3100	1	3	Roots tap barrel - roots in cone interior.

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-7011197	1/10/2019 08:08	0000	0000	1	1	
COL-MWS-7005410	1/10/2019 08:12	0000	0000	1	1	
COL-MWS-7005409	1/10/2019 08:18	0000	0000	1	1	
COL-MWS-7011204	1/10/2019 08:26	0000	0000	1	1	
COL-MWS-7011182	1/10/2019 08:32	3100	0000	3	1	Multiple cracks on bench.
COL-MWS-7011181	1/10/2019 08:39	0000	0000	1	1	
COL-MWS-7011196	1/10/2019 08:46	0000	0000	1	1	
COL-MWS-7011180	1/10/2019 08:51	0000	0000	1	1	
COL-MWS-7011195	1/10/2019 08:58	0000	0000	1	1	
COL-MWS-7011194	1/10/2019 09:03	0000	0000	1	1	
COL-MWS-7011193	1/10/2019 09:07	0000	0000	1	1	
COL-MWS-7011190	1/10/2019 09:11	0000	0000	1	1	
COL-MWS-7013444	1/10/2019 09:18	0000	0000	1	1	
COL-MWS-7013443	1/10/2019 09:24	0000	0000	1	1	
COL-MWS-7013442	1/10/2019 09:36	0000	0000	1	1	
COL-MWS-7013441	1/10/2019 09:51	0000	0000	1	1	
COL-MWS-7005405	1/10/2019 09:59	0000	0000	1	1	
COL-MWS-7020107	1/10/2019 10:05	0000	0000	1	1	
COL-MWS-7005404	1/10/2019 10:11	0000	0000	1	1	
COL-MWS-7005397	1/10/2019 10:18	0000	0000	1	1	
COL-MWS-7005398	1/10/2019 10:21	0000	0000	1	1	
COL-MWS-7011203	1/10/2019 10:25	0000	0000	1	1	
COL-MWS-7002327	1/10/2019 10:42	0000	0000	1	1	
COL-MWS-7002324	1/10/2019 10:46	0000	0000	1	1	
COL-MWS-7002337	1/10/2019 10:51	0000	0000	1	1	
COL-MWS-7002340	1/10/2019 10:57	0000	3121	1	3	Deposits attached ragging - deposits on channel.
COL-MWS-7013828	1/10/2019 11:45	0000	0000	1	1	
COL-MWS-7013829	1/10/2019 11:51	0000	0000	1	1	
COL-MWS-7015502	1/10/2019 12:00	0000	2100	1	2	Obstacle other - stick across bench.
COL-MWS-7015500	1/10/2019 12:02	0000	0000	1	1	
COL-MWS-7015503	1/10/2019 12:09	0000	0000	1	1	
COL-MWS-7013835	1/10/2019 12:16	0000	0000	1	1	
COL-MWS-7013836	1/10/2019 12:22	0000	0000	1	1	
COL-MWS-7013837	1/10/2019 12:28	0000	0000	1	1	
COL-MWS-7013838	1/10/2019 12:32	0000	0000	1	1	
COL-MWS-7013841	1/10/2019 12:36	0000	0000	1	1	
COL-MWS-7013840	1/10/2019 12:39	0000	0000	1	1	
COL-MWS-7013839	1/10/2019 12:42	0000	0000	1	1	
COL-MWS-7013842	1/10/2019 12:46	0000	0000	1	1	
COL-MWS-7013843	1/10/2019 12:50	0000	0000	1	1	
COL-MWS-7013844	1/10/2019 12:55	0000	0000	1	1	
COL-MWS-7013847	1/10/2019 13:00	0000	0000	1	1	
COL-MWS-7013848	1/10/2019 13:04	0000	0000	1	1	
COL-MWS-7014144	1/10/2019 13:10	0000	0000	1	1	
COL-MWS-5011332	1/10/2019 13:30	0000	0000	1	1	
COL-MWS-5005436	1/10/2019 13:37	0000	0000	1	1	
COL-MWS-5005435	1/10/2019 13:42	0000	0000	1	1	
COL-MWS-7014143	1/14/2019 09:06	0000	0000	1	1	
COL-MWS-7013849	1/14/2019 09:12	0000	0000	1	1	
COL-MWS-7013846	1/14/2019 09:18	0000	0000	1	1	
COL-MWS-7013845	1/14/2019 09:22	0000	0000	1	1	
COL-MWS-7013909	1/14/2019 09:29	0000	2100	1	2	Deposits attached ragging - rags in channel.
COL-MWS-7015505	1/14/2019 09:38	0000	0000	1	1	
COL-MWS-7015508	1/14/2019 09:43	0000	2100	1	2	Obstacle other - stick and debris on bench.
COL-MWS-7015504	1/14/2019 09:50	0000	2100	1	2	Deposits attached ragging - rags in channel.
COL-MWS-7015507	1/14/2019 09:55	0000	3100	1	3	Deposits attached ragging - rags in channel.

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-7015509	1/14/2019 09:59	0000	3100	1	3	Deposits attached ragging - rags in channel.
COL-MWS-7015510	1/14/2019 10:05	0000	3121	1	3	Deposits attached ragging - rags in channel. Deposits ingressed gravel - debris on bench.
COL-MWS-7013911	1/14/2019 10:10	0000	0000	1	1	
COL-MWS-7013912	1/14/2019 10:15	0000	0000	1	1	
COL-MWS-7013914	1/14/2019 10:20	0000	0000	1	1	
COL-MWS-7013913	1/14/2019 10:26	0000	0000	1	1	
COL-MWS-7013917	1/14/2019 10:31	0000	0000	1	1	
COL-MWS-7013918	1/14/2019 10:36	0000	0000	1	1	
COL-MWS-7015513	1/14/2019 10:40	0000	0000	1	1	
COL-MWS-7015512	1/14/2019 10:46	0000	0000	1	1	
COL-MWS-7015511	1/14/2019 10:51	0000	0000	1	1	
COL-MWS-7013924	1/14/2019 10:54	0000	0000	1	1	
COL-MWS-7013923	1/14/2019 10:58	0000	0000	1	1	
COL-MWS-7013922	1/14/2019 11:02	0000	0000	1	1	
COL-MWS-7013921	1/14/2019 11:07	0000	0000	1	1	
COL-MWS-7013907	1/14/2019 11:12	0000	0000	1	1	
COL-MWS-7013908	1/14/2019 11:15	0000	0000	1	1	
COL-MWS-7013910	1/14/2019 11:19	0000	0000	1	1	
COL-MWS-7013741	1/14/2019 11:34	0000	0000	1	1	
COL-MWS-7013952	1/14/2019 11:38	0000	0000	1	1	
COL-MWS-7012294	1/14/2019 11:42	0000	0000	1	1	
COL-MWS-7013946	1/14/2019 11:47	0000	0000	1	1	
COL-MWS-7013945	1/14/2019 11:53	0000	0000	1	1	
COL-MWS-7013944	1/14/2019 11:58	0000	0000	1	1	
COL-MWS-7013943	1/14/2019 12:02	0000	0000	1	1	
COL-MWS-7013951	1/14/2019 12:07	0000	0000	1	1	
COL-MWS-7013703	1/14/2019 12:20	0000	0000	1	1	
COL-MWS-7013704	1/14/2019 12:23	0000	0000	1	1	
COL-MWS-7013709	1/14/2019 12:28	0000	0000	1	1	
COL-MWS-7013708	1/14/2019 12:33	0000	0000	1	1	
COL-MWS-7013707	1/14/2019 12:37	0000	0000	1	1	
COL-MWS-7013801	1/14/2019 12:44	0000	0000	1	1	
COL-MWS-7013802	1/14/2019 12:51	0000	0000	1	1	
COL-MWS-7013803	1/14/2019 12:57	0000	0000	1	1	
COL-MWS-7013906	1/14/2019 13:03	0000	0000	1	1	
COL-MWS-7013804	1/14/2019 13:07	0000	0000	1	1	
COL-MWS-7013805	1/14/2019 13:12	0000	0000	1	1	
COL-MWS-5010526	1/14/2019 13:38	0000	2100	1	2	Deposits settled gravel - debris in channel.
COL-MWS-5010527	1/14/2019 13:43	0000	0000	1	1	
COL-MWS-5010513	1/14/2019 13:52	0000	0000	1	1	
COL-MWS-5010507	1/14/2019 14:02	0000	0000	1	1	
COL-MWS-2001532	1/15/2019 07:18	0000	0000	1	1	
COL-MWS-2001533	1/15/2019 07:25	0000	0000	1	1	
COL-MWS-2001537	1/15/2019 07:31	0000	0000	1	1	
COL-MWS-2001538	1/15/2019 07:37	0000	0000	1	1	
COL-MWS-2006240	1/15/2019 07:43	0000	0000	1	1	
COL-MWS-2006241	1/15/2019 07:48	0000	0000	1	1	
COL-MWS-2012151	1/15/2019 07:51	0000	0000	1	1	
COL-MWS-2001521	1/15/2019 08:01	0000	0000	1	1	
COL-MWS-2001522	1/15/2019 08:06	0000	0000	1	1	
COL-MWS-2001523	1/15/2019 08:10	0000	0000	1	1	
COL-MWS-2001524	1/15/2019 08:13	0000	0000	1	1	
COL-MWS-2001517	1/15/2019 08:20	0000	0000	1	1	
COL-MWS-2001518	1/15/2019 08:24	0000	0000	1	1	
COL-MWS-2000227	1/15/2019 08:52	0000	0000	1	1	
COL-MWS-2002222	1/15/2019 08:59	0000	0000	1	1	
COL-MWS-2002223	1/15/2019 09:06	0000	0000	1	1	
COL-MWS-2008627	1/15/2019 10:07	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4004977	1/15/2019 10:37	0000	2100	1	2	Deposits ingressed fine - fine debris in channel.
COL-MWS-4004976	1/15/2019 10:44	0000	0000	1	1	
COL-MWS-1006470	1/15/2019 11:14	0000	2200	1	2	Obstacle pipe material - pipe material in channel.
COL-MWS-1006469	1/15/2019 11:24	0000	3121	1	3	Deposits attached ragging - rags in channel. Deposits ingressed gravel - debris on bench.
COL-MWS-7000140	1/15/2019 12:19	0000	0000	1	1	
COL-MWS-7000139	1/15/2019 12:25	0000	0000	1	1	
COL-MWS-7000131	1/15/2019 12:34	0000	0000	1	1	
COL-MWS-7005250	1/15/2019 12:41	0000	0000	1	1	
COL-MWS-7005249	1/15/2019 12:47	0000	0000	1	1	
COL-MWS-7005248	1/15/2019 12:52	0000	0000	1	1	
COL-MWS-7005247	1/15/2019 12:57	0000	2100	1	2	Roots fine barrel - fine roots in cone interior.
COL-MWS-7005246	1/15/2019 13:02	0000	0000	1	1	
COL-MWS-7005254	1/15/2019 13:06	0000	0000	1	1	
COL-MWS-7010177	1/15/2019 13:10	0000	0000	1	1	
COL-MWS-7002498	1/15/2019 13:31	0000	0000	1	1	
COL-MWS-4014237	1/17/2019 07:36	0000	0000	1	1	
COL-MWS-4014238	1/17/2019 07:42	0000	0000	1	1	
COL-MWS-4014239	1/17/2019 07:48	0000	0000	1	1	
COL-MWS-4014244	1/17/2019 07:59	0000	0000	1	1	
COL-MWS-5015305	1/17/2019 08:07	0000	0000	1	1	
COL-MWS-4015272	1/17/2019 08:13	0000	0000	1	1	
COL-MWS-4015117	1/17/2019 08:19	0000	0000	1	1	
COL-MWS-5013534	1/17/2019 08:42	0000	0000	1	1	
COL-MWS-5013533	1/17/2019 08:48	0000	0000	1	1	
COL-MWS-5004430	1/17/2019 08:59	0000	0000	1	1	
COL-MWS-5004420	1/17/2019 09:05	0000	0000	1	1	
COL-MWS-5004423	1/17/2019 09:11	0000	0000	1	1	
COL-MWS-5004428	1/17/2019 09:16	0000	0000	1	1	
COL-MWS-5004425	1/17/2019 09:22	0000	0000	1	1	
COL-MWS-5000488	1/17/2019 09:28	0000	0000	1	1	
COL-MWS-5005444	1/17/2019 09:42	0000	0000	1	1	
COL-MWS-5005443	1/17/2019 09:47	0000	0000	1	1	
COL-MWS-5011428	1/17/2019 09:56	0000	0000	1	1	
COL-MWS-5011425	1/17/2019 10:00	0000	0000	1	1	
COL-MWS-5011418	1/17/2019 10:04	0000	0000	1	1	
COL-MWS-5011417	1/17/2019 10:09	0000	0000	1	1	
COL-MWS-5014125	1/17/2019 10:17	0000	0000	1	1	
COL-MWS-5011398	1/17/2019 10:27	0000	2100	1	2	Obstacle thru connection - stick in connection.
COL-MWS-5008313	1/18/2019 07:22	0000	0000	1	1	
COL-MWS-5013512	1/18/2019 07:41	0000	0000	1	1	
COL-MWS-5013513	1/18/2019 07:47	0000	0000	1	1	
COL-MWS-5013509	1/18/2019 07:52	0000	0000	1	1	
COL-MWS-5007661	1/18/2019 08:13	0000	0000	1	1	
COL-MWS-5007704	1/18/2019 08:20	0000	0000	1	1	
COL-MWS-5012283	1/18/2019 08:27	0000	0000	1	1	
COL-MWS-5007703	1/18/2019 08:35	0000	0000	1	1	
COL-MWS-5003589	1/18/2019 08:42	0000	0000	1	1	
COL-MWS-5003586	1/18/2019 08:50	0000	2100	1	2	Obstacle brick - brick in bench.
COL-MWS-5007732	1/18/2019 08:57	0000	0000	1	1	
COL-MWS-5003590	1/18/2019 09:02	0000	0000	1	1	
COL-MWS-5007706	1/18/2019 09:11	0000	0000	1	1	
COL-MWS-5007705	1/18/2019 09:16	0000	0000	1	1	
COL-MWS-5007730	1/18/2019 09:22	0000	0000	1	1	
COL-MWS-5003473	1/18/2019 09:29	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-5003474	1/18/2019 09:35	0000	0000	1	1	
COL-MWS-5003461	1/18/2019 09:40	0000	0000	1	1	
COL-MWS-5015297	1/18/2019 09:50	0000	0000	1	1	
COL-MWS-5010464	1/18/2019 09:55	0000	0000	1	1	
COL-MWS-5010465	1/18/2019 10:00	0000	0000	1	1	
COL-MWS-5003472	1/18/2019 10:07	0000	0000	1	1	
COL-MWS-5005503	1/18/2019 10:16	0000	0000	1	1	
COL-MWS-5005504	1/18/2019 10:23	0000	0000	1	1	
COL-MWS-5012918	1/18/2019 10:34	0000	0000	1	1	
COL-MWS-5010536	1/18/2019 10:42	0000	0000	1	1	
COL-MWS-5010537	1/18/2019 10:46	0000	0000	1	1	
COL-MWS-5010538	1/18/2019 10:51	0000	0000	1	1	
COL-MWS-5011035	1/18/2019 11:55	0000	0000	1	1	
COL-MWS-5011037	1/18/2019 12:03	0000	0000	1	1	
COL-MWS-5005288	1/18/2019 12:13	0000	0000	1	1	
COL-MWS-4008827	1/18/2019 12:50	0000	0000	1	1	
COL-MWS-4008826	1/18/2019 12:55	0000	0000	1	1	
COL-MWS-4008825	1/18/2019 13:00	0000	0000	1	1	
COL-MWS-4008823	1/18/2019 13:06	0000	0000	1	1	
COL-MWS-4008824	1/18/2019 13:11	0000	0000	1	1	
COL-MWS-4008822	1/18/2019 13:14	0000	0000	1	1	
COL-MWS-4008828	1/18/2019 13:21	0000	0000	1	1	
COL-MWS-4008717	1/18/2019 13:28	0000	0000	1	1	
COL-MWS-4012327	1/18/2019 13:42	0000	0000	1	1	
COL-MWS-4012326	1/18/2019 13:48	0000	0000	1	1	
COL-MWS-4008581	1/18/2019 13:53	0000	0000	1	1	
COL-MWS-4008580	1/18/2019 13:58	0000	0000	1	1	
COL-MWS-4004624	1/18/2019 14:03	0000	0000	1	1	
COL-MWS-4004535	1/22/2019 08:23	0000	0000	1	1	
COL-MWS-4007804	1/22/2019 08:28	0000	0000	1	1	
COL-MWS-4000420	1/22/2019 08:34	0000	3100	1	3	Obstacle other - debris oin channel.
COL-MWS-4007859	1/22/2019 08:45	0000	0000	1	1	
COL-MWS-4003879	1/22/2019 08:51	0000	0000	1	1	
COL-MWS-4003881	1/22/2019 08:56	0000	0000	1	1	
COL-MWS-4003818	1/22/2019 09:04	0000	0000	1	1	
COL-MWS-4003819	1/22/2019 09:10	0000	0000	1	1	
COL-MWS-4003840	1/22/2019 09:15	0000	0000	1	1	
COL-MWS-4003820	1/22/2019 09:24	0000	0000	1	1	
COL-MWS-4008639	1/22/2019 10:11	0000	2100	1	2	Deposits attached ragging - rags debris in channel.
COL-MWS-4008640	1/22/2019 10:18	0000	0000	1	1	
COL-MWS-4008641	1/22/2019 10:24	0000	0000	1	1	
COL-MWS-4008642	1/22/2019 10:30	0000	0000	1	1	
COL-MWS-4008643	1/22/2019 10:34	0000	0000	1	1	
COL-MWS-4008644	1/22/2019 10:39	0000	0000	1	1	
COL-MWS-4008645	1/22/2019 10:47	0000	0000	1	1	
COL-MWS-4004854	1/22/2019 10:54	0000	0000	1	1	
COL-MWS-4004855	1/22/2019 11:04	0000	0000	1	1	
COL-MWS-4008990	1/22/2019 11:08	0000	2100	1	2	Deposits attached - deposits in channel.
COL-MWS-4004956	1/22/2019 11:14	0000	0000	1	1	
COL-MWS-4004957	1/22/2019 11:19	0000	0000	1	1	
COL-MWS-4004959	1/22/2019 11:26	0000	0000	1	1	
COL-MWS-4004960	1/22/2019 11:32	0000	0000	1	1	
COL-MWS-4008946	1/22/2019 11:39	0000	0000	1	1	
COL-MWS-4008947	1/22/2019 11:44	0000	0000	1	1	
COL-MWS-4007917	1/22/2019 12:15	0000	0000	1	1	
COL-MWS-4007918	1/22/2019 12:21	0000	0000	1	1	
COL-MWS-4007911	1/22/2019 12:25	0000	0000	1	1	
COL-MWS-4007912	1/22/2019 12:31	0000	0000	1	1	
COL-MWS-4007913	1/22/2019 12:42	0000	0000	1	1	
COL-MWS-4007914	1/22/2019 12:46	0000	0000	1	1	
COL-MWS-4007915	1/22/2019 12:51	0000	0000	1	1	
COL-MWS-4007906	1/22/2019 13:11	0000	0000	1	1	
COL-MWS-4007916	1/22/2019 13:17	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4007910	1/22/2019 13:22	0000	0000	1	1	
COL-MWS-4007907	1/22/2019 13:26	0000	0000	1	1	
COL-MWS-4014095	1/22/2019 13:53	0000	0000	1	1	
COL-MWS-4020080	1/22/2019 13:58	0000	0000	1	1	
COL-MWS-4014097	1/22/2019 14:03	0000	0000	1	1	
COL-MWS-2014560	1/23/2019 08:04	0000	0000	1	1	
COL-MWS-2014561	1/23/2019 08:27	0000	0000	1	1	
COL-MWS-2014562	1/23/2019 08:41	0000	0000	1	1	
COL-MWS-2014563	1/23/2019 08:52	0000	0000	1	1	
COL-MWS-2014565	1/23/2019 09:00	0000	0000	1	1	
COL-MWS-2014566	1/23/2019 09:08	0000	0000	1	1	
COL-MWS-3015057	1/23/2019 09:42	0000	0000	1	1	
COL-MWS-3015056	1/23/2019 09:55	0000	0000	1	1	
COL-MWS-3015055	1/23/2019 10:02	0000	0000	1	1	
COL-MWS-3003008	1/23/2019 10:10	0000	2100	1	2	Deposits attached ragging- Rags in channel.
COL-MWS-3007329	1/23/2019 10:21	0000	0000	1	1	
COL-MWS-3013100	1/23/2019 10:52	0000	0000	1	1	
COL-MWS-3003002	1/23/2019 11:08	0000	0000	1	1	
COL-MWS-4007231	1/23/2019 11:18	0000	4100	1	4	Obstacle construction debris - debris on bench.
COL-MWS-4007232	1/23/2019 12:01	0000	0000	1	1	
COL-MWS-4007233	1/23/2019 12:09	0000	0000	1	1	
COL-MWS-4014704	1/23/2019 12:19	0000	5231	1	5	Infiltration Gusher - water coming through channel & wall interior. Roots tap in barrel.
COL-MWS-2012374	1/28/2019 08:09	0000	0000	1	1	
COL-MWS-2012375	1/28/2019 08:17	0000	0000	1	1	
COL-MWS-2012376	1/28/2019 08:24	0000	0000	1	1	
COL-MWS-2012372	1/28/2019 08:30	0000	0000	1	1	
COL-MWS-2012370	1/28/2019 08:36	0000	0000	1	1	
COL-MWS-2012369	1/28/2019 09:03	0000	0000	1	1	
COL-MWS-2009101	1/28/2019 09:11	0000	0000	1	1	
COL-MWS-2012386	1/28/2019 09:20	0000	0000	1	1	
COL-MWS-2009093	1/28/2019 09:28	0000	0000	1	1	
COL-MWS-2009094	1/28/2019 09:34	0000	3200	1	3	Deposits attached ragging - rags in channel.
COL-MWS-2009095	1/28/2019 09:47	0000	0000	1	1	
COL-MWS-2009096	1/28/2019 09:57	0000	0000	1	1	
COL-MWS-2008731	1/28/2019 10:33	0000	0000	1	1	
COL-MWS-2008732	1/28/2019 10:43	0000	0000	1	1	
COL-MWS-2008733	1/28/2019 10:49	0000	0000	1	1	
COL-MWS-2008734	1/28/2019 10:54	0000	0000	1	1	
COL-MWS-2012355	1/28/2019 12:11	0000	0000	1	1	
COL-MWS-2008332	1/28/2019 12:20	0000	0000	1	1	
COL-MWS-2008663	1/28/2019 12:34	0000	0000	1	1	
COL-MWS-2008666	1/28/2019 12:54	0000	0000	1	1	
COL-MWS-2008669	1/28/2019 13:14	0000	0000	1	1	
COL-MWS-2008667	1/28/2019 13:30	0000	0000	1	1	
COL-MWS-2012344	1/28/2019 13:36	0000	0000	1	1	
COL-MWS-2012354	1/28/2019 13:43	0000	0000	1	1	
COL-MWS-2012353	1/28/2019 13:47	0000	0000	1	1	
COL-MWS-2013588	1/28/2019 13:57	0000	0000	1	1	
COL-MWS-2013587	1/28/2019 14:05	0000	0000	1	1	
COL-MWS-2013586	1/28/2019 14:09	0000	0000	1	1	
COL-MWS-2013585	1/28/2019 14:15	0000	0000	1	1	
COL-MWS-4013558	1/29/2019 07:54	0000	0000	1	1	
COL-MWS-4013559	1/29/2019 08:02	3100	0000	3	1	Surface aggregate visible - in channel.
COL-MWS-4013560	1/29/2019 08:12	3100	0000	3	1	Lining failure blistered - in channel.
COL-MWS-4013563	1/29/2019 08:19	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2013564	1/29/2019 08:27	3100	0000	3	1	Lining failure overcut - wall interior.
COL-MWS-2013565	1/29/2019 08:34	0000	0000	1	1	
COL-MWS-2013566	1/29/2019 08:43	3100	0000	3	1	Lining failure overcut - wall interior. Lining failure other - channel deteriorating.
COL-MWS-2013567	1/29/2019 08:51	3100	0000	3	1	Lining failure blistered - in chimney, Lining failure other - wall peeling.
COL-MWS-2013569	1/29/2019 09:19	0000	0000	1	1	
COL-MWS-2013570	1/29/2019 09:29	5131	0000	5	1	Surface missing wall - Deterioration on bench. Lining failure detached - wall interior.
COL-MWS-2013571	1/29/2019 09:40	0000	0000	1	1	
COL-MWS-4000560	1/29/2019 10:40	0000	0000	1	1	
COL-MWS-4000559	1/29/2019 10:49	0000	0000	1	1	
COL-MWS-4008722	1/29/2019 10:55	0000	0000	1	1	
COL-MWS-4008724	1/29/2019 11:06	0000	0000	1	1	
COL-MWS-4008725	1/29/2019 11:12	0000	0000	1	1	
COL-MWS-4009191	1/29/2019 11:16	0000	3100	1	3	Deposits attached grease - in channel.
COL-MWS-4008726	1/29/2019 11:25	0000	0000	1	1	
COL-MWS-4000556	1/29/2019 11:47	0000	0000	1	1	
COL-MWS-4004941	1/29/2019 11:55	0000	0000	1	1	
COL-MWS-4008774	1/29/2019 12:41	0000	0000	1	1	
COL-MWS-4004971	1/29/2019 12:48	0000	0000	1	1	
COL-MWS-4004972	1/29/2019 12:59	0000	0000	1	1	
COL-MWS-4004973	1/29/2019 13:05	0000	0000	1	1	
COL-MWS-4004974	1/29/2019 13:10	0000	0000	1	1	
COL-MWS-4008579	1/30/2019 08:06	0000	0000	1	1	
COL-MWS-4008578	1/30/2019 08:12	0000	0000	1	1	
COL-MWS-4008572	1/30/2019 08:18	0000	0000	1	1	
COL-MWS-4008577	1/30/2019 08:25	0000	0000	1	1	
COL-MWS-4008575	1/30/2019 08:34	0000	0000	1	1	
COL-MWS-4015286	1/30/2019 08:50	0000	0000	1	1	
COL-MWS-4008612	1/30/2019 09:33	0000	0000	1	1	
COL-MWS-4008613	1/30/2019 09:40	0000	0000	1	1	
COL-MWS-4008618	1/30/2019 09:47	0000	0000	1	1	
COL-MWS-4012329	1/30/2019 09:54	0000	0000	1	1	
COL-MWS-4008601	1/30/2019 11:00	0000	4100	1	4	Roots medium barrel - roots in chimney.
COL-MWS-4008600	1/30/2019 11:13	0000	2100	1	2	Deposits attached encrustation - in channel.
COL-MWS-4008599	1/30/2019 11:19	0000	0000	1	1	
COL-MWS-4015293	1/30/2019 11:59	0000	0000	1	1	
COL-MWS-4000557	1/30/2019 12:08	0000	0000	1	1	
COL-MWS-4004947	1/30/2019 12:21	0000	0000	1	1	
COL-MWS-4004519	1/31/2019 09:25	0000	0000	1	1	
COL-MWS-4004520	1/31/2019 09:38	0000	0000	1	1	
COL-MWS-4015114	1/31/2019 10:02	0000	2100	1	2	Deposits attached encrustation - in channel.
COL-MWS-4015115	1/31/2019 10:10	0000	0000	1	1	
COL-MWS-4015116	1/31/2019 10:15	0000	0000	1	1	
COL-MWS-4015112	1/31/2019 10:24	0000	0000	1	1	
COL-MWS-4015831	1/31/2019 10:35	0000	3100	1	3	Deposits attached ragging - rags in channel.

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4015118	1/31/2019 10:41	0000	0000	1	1	
COL-MWS-4015119	1/31/2019 10:50	0000	0000	1	1	
COL-MWS-5013510	1/31/2019 11:11	0000	0000	1	1	
COL-MWS-5004307	1/31/2019 11:33	0000	0000	1	1	
COL-MWS-5004306	1/31/2019 11:41	0000	0000	1	1	
COL-MWS-5004332	1/31/2019 11:55	0000	0000	1	1	
COL-MWS-5004333	1/31/2019 12:04	0000	0000	1	1	
COL-MWS-5004331	1/31/2019 12:14	0000	3121	1	3	Deposits attached ragging - rags in channel.
COL-MWS-1001063	2/1/2019 08:05	0000	0000	1	1	
COL-MWS-1001066	2/1/2019 08:16	0000	0000	1	1	
COL-MWS-1001067	2/1/2019 08:25	0000	0000	1	1	
COL-MWS-1001068	2/1/2019 08:32	0000	0000	1	1	
COL-MWS-2001415	2/1/2019 08:53	0000	0000	1	1	
COL-MWS-2001446	2/1/2019 09:09	0000	0000	1	1	
COL-MWS-2001394	2/1/2019 09:27	0000	0000	1	1	
COL-MWS-2001395	2/1/2019 09:32	0000	0000	1	1	
COL-MWS-2001396	2/1/2019 09:38	0000	0000	1	1	
COL-MWS-2005236	2/1/2019 09:55	0000	0000	1	1	
COL-MWS-2005235	2/1/2019 10:05	0000	2100	1	2	Obstacle brick - bricks in bench.
COL-MWS-2010092	2/1/2019 10:16	0000	0000	1	1	
COL-MWS-2005234	2/1/2019 10:23	0000	0000	1	1	
COL-MWS-2005233	2/1/2019 10:30	0000	0000	1	1	
COL-MWS-2002218	2/1/2019 10:41	0000	0000	1	1	
COL-MWS-2002217	2/1/2019 10:49	0000	0000	1	1	
COL-MWS-3002215	2/1/2019 10:57	0000	0000	1	1	
COL-MWS-2002276	2/1/2019 11:32	0000	0000	1	1	
COL-MWS-2002275	2/1/2019 11:41	0000	0000	1	1	
COL-MWS-2002274	2/1/2019 11:45	0000	0000	1	1	
COL-MWS-2002237	2/1/2019 11:52	0000	0000	1	1	
COL-MWS-2002224	2/1/2019 12:00	0000	0000	1	1	
COL-MWS-2002238	2/1/2019 12:11	0000	0000	1	1	
COL-MWS-1002032	2/1/2019 12:58	0000	0000	1	1	
COL-MWS-1002033	2/1/2019 13:05	0000	0000	1	1	
COL-MWS-1006678	2/1/2019 13:17	0000	0000	1	1	
COL-MWS-1002037	2/1/2019 13:20	0000	0000	1	1	
COL-MWS-1002038	2/1/2019 13:23	0000	0000	1	1	
COL-MWS-7009778	2/1/2019 13:48	0000	0000	1	1	
COL-MWS-7001686	2/1/2019 14:02	0000	0000	1	1	
COL-MWS-7001685	2/1/2019 14:10	0000	0000	1	1	
COL-MWS-7001683	2/1/2019 14:22	0000	0000	1	1	
COL-MWS-7006331	2/1/2019 14:28	0000	0000	1	1	
COL-MWS-7014073	2/4/2019 08:28	0000	0000	1	1	
COL-MWS-7009771	2/4/2019 08:38	0000	0000	1	1	
COL-MWS-7012675	2/4/2019 08:54	0000	0000	1	1	
COL-MWS-7009772	2/4/2019 09:05	0000	2200	1	2	Deposits attached grease - grease in channel. Deposits attached ragging - rags in channel.
COL-MWS-6011020	2/4/2019 09:29	0000	0000	1	1	
COL-MWS-6003375	2/4/2019 09:42	0000	0000	1	1	
COL-MWS-6003374	2/4/2019 09:50	0000	5131	1	5	Infiltration Gusher - water coming through pipe connection. Obstacle pipe material - pipe material on bench.
COL-MWS-6013373	2/4/2019 09:59	0000	0000	1	1	
COL-MWS-5015075	2/4/2019 10:14	0000	0000	1	1	
COL-MWS-5014713	2/4/2019 10:39	0000	0000	1	1	
COL-MWS-5014707	2/4/2019 10:46	0000	0000	1	1	
COL-MWS-5014710	2/4/2019 10:54	0000	0000	1	1	
COL-MWS-5014708	2/4/2019 11:03	0000	0000	1	1	
COL-MWS-5014717	2/4/2019 11:14	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-5014718	2/4/2019 11:23	0000	0000	1	1	
COL-MWS-5014720	2/4/2019 11:33	0000	0000	1	1	
COL-MWS-5015076	2/4/2019 11:52	0000	0000	1	1	
COL-MWS-5015077	2/4/2019 12:00	0000	0000	1	1	
COL-MWS-7002493	2/4/2019 12:20	0000	0000	1	1	
COL-MWS-7002494	2/4/2019 12:28	0000	0000	1	1	
COL-MWS-7006880	2/4/2019 12:36	0000	0000	1	1	
COL-MWS-7002495	2/4/2019 12:40	0000	2100	1	2	Deposits attached ragging - rags in channel.
COL-MWS-7006879	2/4/2019 12:54	0000	0000	1	1	
COL-MWS-7006843	2/4/2019 13:01	0000	0000	1	1	
COL-MWS-5015082	2/4/2019 13:14	0000	0000	1	1	
COL-MWS-3015818	2/4/2019 13:21	0000	0000	1	1	
COL-MWS-5011648	2/4/2019 13:30	0000	0000	1	1	
COL-MWS-7013751	2/5/2019 04:46	0000	0000	1	1	
COL-MWS-7013750	2/5/2019 04:53	0000	0000	1	1	
COL-MWS-7013710	2/5/2019 04:58	0000	0000	1	1	
COL-MWS-7013748	2/5/2019 05:04	0000	0000	1	1	
COL-MWS-7013747	2/5/2019 05:10	0000	2100	1	2	Deposits attached grease - grease in channel.
COL-MWS-7014137	2/5/2019 05:15	0000	0000	1	1	
COL-MWS-7013746	2/5/2019 05:21	0000	0000	1	1	
COL-MWS-7013745	2/5/2019 05:26	0000	0000	1	1	
COL-MWS-7013744	2/5/2019 05:30	0000	0000	1	1	
COL-MWS-7014136	2/5/2019 05:34	0000	0000	1	1	
COL-MWS-7013743	2/5/2019 05:40	0000	0000	1	1	
COL-MWS-7013742	2/5/2019 05:44	0000	3100	1	3	Deposits attached ragging - rags in channel.
COL-MWS-7014139	2/5/2019 06:03	0000	0000	1	1	
COL-MWS-7013806	2/5/2019 06:12	0000	0000	1	1	
COL-MWS-7014138	2/5/2019 06:21	0000	0000	1	1	
COL-MWS-4011163	2/5/2019 07:04	0000	0000	1	1	
COL-MWS-4003904	2/5/2019 07:12	0000	0000	1	1	
COL-MWS-4003902	2/5/2019 07:18	0000	0000	1	1	
COL-MWS-4007848	2/5/2019 07:37	0000	0000	1	1	
COL-MWS-2012405	2/5/2019 08:34	0000	0000	1	1	
COL-MWS-2015259	2/5/2019 08:41	3100	0000	3	1	Lining Failure Detached - Wall Interior.
COL-MWS-2015253	2/5/2019 08:52	0000	0000	1	1	
COL-MWS-2015251	2/5/2019 09:00	0000	0000	1	1	
COL-MWS-2015250	2/5/2019 09:09	0000	0000	1	1	
COL-MWS-2014622	2/5/2019 09:19	0000	0000	1	1	
COL-MWS-2015248	2/5/2019 09:24	0000	0000	1	1	
COL-MWS-2015249	2/5/2019 09:31	0000	0000	1	1	
COL-MWS-4005112	2/5/2019 10:29	0000	0000	1	1	
COL-MWS-4005116	2/5/2019 10:35	0000	0000	1	1	
COL-MWS-4005115	2/5/2019 10:42	0000	2100	1	2	Deposits settled gravel - gravel on bench.
COL-MWS-4005097	2/5/2019 10:48	0000	0000	1	1	
COL-MWS-2007372	2/6/2019 04:14	0000	0000	1	1	
COL-MWS-2014609	2/6/2019 04:20	0000	0000	1	1	
COL-MWS-2014606	2/6/2019 04:25	0000	0000	1	1	
COL-MWS-2014605	2/6/2019 04:28	0000	0000	1	1	
COL-MWS-2014604	2/6/2019 04:31	0000	0000	1	1	
COL-MWS-2014603	2/6/2019 04:37	0000	0000	1	1	
COL-MWS-2014602	2/6/2019 04:43	0000	0000	1	1	
COL-MWS-2007374	2/6/2019 04:58	0000	0000	1	1	
COL-MWS-2007375	2/6/2019 05:02	0000	0000	1	1	
COL-MWS-4002799	2/6/2019 05:21	0000	0000	1	1	
COL-MWS-4005311	2/6/2019 05:59	0000	0000	1	1	
COL-MWS-3007103	2/6/2019 06:07	0000	0000	1	1	
COL-MWS-3002800	2/6/2019 06:13	0000	0000	1	1	
COL-MWS-6002421	2/6/2019 07:19	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-6002423	2/6/2019 07:25	0000	0000	1	1	
COL-MWS-6002487	2/6/2019 07:33	0000	0000	1	1	
COL-MWS-5004905	2/6/2019 08:01	0000	0000	1	1	
COL-MWS-5004904	2/6/2019 08:07	0000	0000	1	1	
COL-MWS-5004858	2/6/2019 08:23	0000	3100	1	3	Obstacle other - joint intruding into channel.
COL-MWS-6000461	2/6/2019 08:42	0000	0000	1	1	
COL-MWS-6004246	2/6/2019 08:49	0000	0000	1	1	
COL-MWS-6004247	2/6/2019 08:52	0000	0000	1	1	
COL-MWS-5011047	2/6/2019 09:14	0000	0000	1	1	
COL-MWS-5005379	2/6/2019 09:19	0000	0000	1	1	
COL-MWS-5005378	2/6/2019 09:25	0000	0000	1	1	
COL-MWS-5011070	2/6/2019 09:32	0000	0000	1	1	
COL-MWS-5011072	2/6/2019 09:38	0000	0000	1	1	
COL-MWS-5013424	2/6/2019 09:45	0000	0000	1	1	
COL-MWS-5011097	2/6/2019 09:50	0000	0000	1	1	
COL-MWS-5013428	2/6/2019 10:00	0000	0000	1	1	
COL-MWS-6012897	3/12/2019 11:15	0000	1100	1	1	Vermin cockroach - on wall interior.
COL-MWS-6012896	3/12/2019 12:04	0000	3100	1	3	Deposits attached ragging - on channel.
COL-MWS-6012895	3/12/2019 12:13	0000	1100	1	1	Vermin cockroach - on wall interior.
COL-MWS-5013687	3/12/2019 12:30	3100	0000	3	1	Lining failure buckled - wall interior.
COL-MWS-5013686	3/12/2019 12:45	0000	0000	1	1	
COL-MWS-1014018	3/13/2019 08:45	0000	0000	1	1	
COL-MWS-1001051	3/13/2019 09:10	0000	0000	1	1	
COL-MWS-1000794	3/13/2019 09:14	0000	0000	1	1	
COL-MWS-1000795	3/13/2019 09:19	0000	0000	1	1	
COL-MWS-1005975	3/13/2019 09:42	0000	0000	1	1	
COL-MWS-1000789	3/13/2019 09:47	0000	0000	1	1	
COL-MWS-1000790	3/13/2019 09:54	0000	1100	1	1	Vermin cockroach - on wall interior.
COL-MWS-1005976	3/13/2019 10:02	0000	0000	1	1	
COL-MWS-1000013	3/13/2019 10:53	0000	0000	1	1	
COL-MWS-1000014	3/13/2019 11:00	0000	0000	1	1	
COL-MWS-1000015	3/13/2019 11:07	0000	0000	1	1	
COL-MWS-4013592	3/14/2019 01:07	0000	3111	1	3	Obstacle construction debris - on bench. Vermin cockroach - on wall interior.
COL-MWS-4013591	3/14/2019 01:17	0000	0000	1	1	
COL-MWS-4013590	3/14/2019 01:24	0000	1100	1	1	Vermin cockroach - on wall interior.
COL-MWS-4013589	3/14/2019 01:30	0000	1100	1	1	Vermin cockroach - on wall interior.
COL-MWS-4015291	3/14/2019 01:44	0000	0000	1	1	
COL-MWS-4015294	3/14/2019 01:52	0000	0000	1	1	
COL-MWS-4009132	3/14/2019 02:09	0000	0000	1	1	
COL-MWS-4009133	3/14/2019 02:20	0000	0000	1	1	
COL-MWS-4000558	3/14/2019 02:38	0000	0000	1	1	
COL-MWS-4000561	3/14/2019 02:45	0000	0000	1	1	
COL-MWS-5004891	3/14/2019 03:07	0000	0000	1	1	
COL-MWS-5008293	3/14/2019 03:14	0000	0000	1	1	
COL-MWS-5004309	3/14/2019 03:19	0000	1100	1	1	Vermin cockroach - on wall interior.
COL-MWS-5008294	3/14/2019 03:27	0000	0000	1	1	
COL-MWS-5004324	3/14/2019 03:32	0000	0000	1	1	
COL-MWS-5004325	3/14/2019 03:42	0000	0000	1	1	
COL-MWS-6004334	3/14/2019 03:49	0000	0000	1	1	
COL-MWS-4008068	3/14/2019 04:18	0000	0000	1	1	
COL-MWS-4015271	3/14/2019 04:31	0000	0000	1	1	
COL-MWS-4008081	3/14/2019 04:38	0000	0000	1	1	

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1000680	3/14/2019 23:42	0000	0000	1	1	
COL-MWS-1000605	3/14/2019 23:52	0000	0000	1	1	
COL-MWS-1005896	3/15/2019 00:16	0000	0000	1	1	
COL-MWS-1000648	3/15/2019 00:28	0000	0000	1	1	
COL-MWS-1005717	3/15/2019 00:35	0000	0000	1	1	
COL-MWS-1009450	3/15/2019 00:53	0000	0000	1	1	
COL-MWS-1001065	3/15/2019 01:09	0000	0000	1	1	
COL-MWS-2014383	3/15/2019 01:22	0000	3121	1	3	Obstacle other - object in channel / leaning on wall. Deposits attached ragging - ragging collecting behind obstacle in channel.
COL-MWS-2000121	3/15/2019 01:49	0000	0000	1	1	
COL-MWS-2001454	3/15/2019 02:18	0000	0000	1	1	
COL-MWS-3002800	3/15/2019 02:38	0000	0000	1	1	
COL-MWS-3002825	3/15/2019 02:48	0000	0000	1	1	
COL-MWS-3002824	3/15/2019 02:58	0000	0000	1	1	
COL-MWS-3002823	3/15/2019 03:09	0000	0000	1	1	
COL-MWS-5010561	3/15/2019 03:32	0000	0000	1	1	
COL-MWS-5005289	3/15/2019 03:42	0000	0000	1	1	
COL-MWS-5003536	3/15/2019 03:49	0000	0000	1	1	
COL-MWS-5007719	3/15/2019 03:54	0000	0000	1	1	
COL-MWS-5003545	3/15/2019 04:00	0000	0000	1	1	
COL-MWS-1000038	3/19/2019 07:58	0000	0000	1	1	
COL-MWS-1020025	3/19/2019 08:54	0000	0000	1	1	
COL-MWS-1000039	3/19/2019 09:03	0000	0000	1	1	
COL-MWS-1020026	3/19/2019 09:16	0000	0000	1	1	
COL-MWS-1000040	3/19/2019 09:21	0000	0000	1	1	
COL-MWS-1000837	3/19/2019 09:30	0000	0000	1	1	
COL-MWS-1000041	3/19/2019 09:39	0000	0000	1	1	
COL-MWS-1000838	3/19/2019 09:48	0000	0000	1	1	
COL-MWS-1000042	3/19/2019 10:01	0000	0000	1	1	
COL-MWS-1000839	3/19/2019 10:15	0000	0000	1	1	
COL-MWS-1000840	3/19/2019 11:20	0000	0000	1	1	
COL-MWS-1000833	3/19/2019 11:26	0000	0000	1	1	
COL-MWS-1000841	3/19/2019 11:31	0000	0000	1	1	
COL-MWS-1000834	3/19/2019 11:42	0000	0000	1	1	
COL-MWS-1000842	3/19/2019 12:02	0000	0000	1	1	
COL-MWS-1000836	3/19/2019 12:15	0000	0000	1	1	
COL-MWS-1012563	3/19/2019 12:21	0000	0000	1	1	
COL-MWS-1000835	3/19/2019 12:31	0000	0000	1	1	
COL-MWS-1012562	3/19/2019 12:36	0000	0000	1	1	
COL-MWS-1012570	3/19/2019 13:05	0000	0000	1	1	
COL-MWS-1012565	3/19/2019 13:10	0000	0000	1	1	
COL-MWS-1000032	6/18/2019			UNK	UNK	TRAFFIC (AT NIGTH FLAGGER)
COL-MWS-1000088	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1000089	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1000182	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1000183	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1000186	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1000606	6/18/2019			UNK	UNK	NEXT TO WASH/ UNABLE TO LOCATE. POSSIBLY IN PROPERTY
COL-MWS-1000608	6/18/2019			UNK	UNK	UNABLE TO LOCATE. POSSIBLY INSIDE PROPERTY
COL-MWS-1000609	6/18/2019			UNK	UNK	NEXT TO WASH/ UNABLE TO LOCATE. POSSIBLY IN PROPERTY

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1000633	6/18/2019			UNK	UNK	UNABLE TO LOCATE. POSSIBLY INSIDE PROPERTY
COL-MWS-1000646	6/18/2019			UNK	UNK	BEHIND WALL NEXT TO WASH
COL-MWS-1000649	6/18/2019			UNK	UNK	FENCED. AT WASH
COL-MWS-1000651	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-1000669	6/18/2019			UNK	UNK	CLEANOUT
COL-MWS-1000670	6/18/2019			UNK	UNK	CLEANOUT
COL-MWS-1000679	6/18/2019			UNK	UNK	TRAFFIC (AT NIGHT)
COL-MWS-1000740	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-1000791	6/18/2019			UNK	UNK	UNABLE TO LOCATE. PAVED OVER
COL-MWS-1000792	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1000793	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1000796	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-1000797	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-1000798	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-1000799	6/18/2019			UNK	UNK	TRAFFIC (AT NIGHT FLAGER)
COL-MWS-1000820	6/18/2019			UNK	UNK	INSIDE WAREHOUSE FENCE PAGE 9
COL-MWS-1000821	6/18/2019			UNK	UNK	INSIDE WAREHOUSE FENCE PAGE 9
COL-MWS-1000822	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-1000836	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1000960	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1000962	6/18/2019			UNK	UNK	INSIDE PARK
COL-MWS-1000963	6/18/2019			UNK	UNK	INSIDE PARK
COL-MWS-1001201	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1001202	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1001806	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1001807	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1001808	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1001886	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1001887	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1001888	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1001893	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1001895	6/18/2019			UNK	UNK	UNABLE TO LOCATE / IN BACK YARD
COL-MWS-1001896	6/18/2019			UNK	UNK	UNABLE TO LOCATE / IN BACK YARD
COL-MWS-1001899	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1001904	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-1001908	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1001910	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1001911	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1002043	6/18/2019			UNK	UNK	NEAR TRAIN TRACKS UNABLE TO LOCATE
COL-MWS-1002044	6/18/2019			UNK	UNK	NEAR TRAIN TRACKS UNABLE TO LOCATE
COL-MWS-1005144	6/18/2019			UNK	UNK	UNABLE TO LOCATE

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1005715	6/18/2019			UNK	UNK	GREASE BOX? THERE ARE 3 MH ALL LOOKLIKE GREASE BOX
COL-MWS-1005716	6/18/2019			UNK	UNK	UNABLE TO LOCATE (STRONG ST.)
COL-MWS-1005874	6/18/2019			UNK	UNK	CLEANOUT
COL-MWS-1005898	6/18/2019			UNK	UNK	BEHIND WALL NEXT TO WASH
COL-MWS-1005899	6/18/2019			UNK	UNK	BEHIND WALL NEXT TO WASH
COL-MWS-1005977	6/18/2019			UNK	UNK	TRAFFIC (AT NIGHT FLAGGER)
COL-MWS-1005996	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1006020	6/18/2019			UNK	UNK	ON GRASS AT PARK
COL-MWS-1006021	6/18/2019			UNK	UNK	UNABLE TO LOCATE. POSSIBLY INSIDE PROPERTY
COL-MWS-1006022	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1006027	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-1006040	6/18/2019			UNK	UNK	INSIDE PARK ON GRASS
COL-MWS-1006041	6/18/2019			UNK	UNK	INSIDE PARK ON GRASS
COL-MWS-1006057	6/18/2019			UNK	UNK	INSIDE PARK ON GRASS
COL-MWS-1006058	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1006095	6/18/2019			UNK	UNK	TRAFFIC (SPRUCE AT TRAIN TRACKS)
COL-MWS-1006106	6/18/2019			UNK	UNK	FENCED
COL-MWS-1006142	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006342	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006461	6/18/2019			UNK	UNK	POSSIBLY IN BACK YARD
COL-MWS-1006462	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006471	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006474	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006476	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006477	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006478	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006479	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006480	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006481	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006482	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006483	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006484	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006485	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006486	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006487	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006488	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006489	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006491	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006492	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006493	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006494	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1006603	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-1006605	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-1006606	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-1006607	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-1006608	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-1006618	6/18/2019			UNK	UNK	BIKE TRAIL

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1009587	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-1011756	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1011808	6/18/2019			UNK	UNK	UNABLE TO LOCATE NEAR TRAIN TRACKS
COL-MWS-1012093	6/18/2019			UNK	UNK	AT PARK (GARNER RD.) GUARD RAIL UNABLE TO REACH
COL-MWS-1012094	6/18/2019			UNK	UNK	AT PARK (GARNER RD.) GUARD RAIL UNABLE TO REACH
COL-MWS-1012096	6/18/2019			UNK	UNK	INSIDE PARK
COL-MWS-1012117	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-1012134	6/18/2019			UNK	UNK	UNABLE TO LOCATE AT PARK (BANKS DR.)
COL-MWS-1012136	6/18/2019			UNK	UNK	ON GRASS AT PARK
COL-MWS-1012564	6/18/2019			UNK	UNK	COVERED IN BRUSH/ UNCABLE TO ACCESS
COL-MWS-1012569	6/18/2019			UNK	UNK	COVERED IN BRUSH/ UNCABLE TO ACCESS
COL-MWS-1012574	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1012594	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-1012595	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-1013961	6/18/2019			UNK	UNK	UNABLE TO LOCATE (PAGE 12) AT PARK ON MARKET ST.
COL-MWS-10114007	6/18/2019			UNK	UNK	INSIDE PARK
COL-MWS-1014008	6/18/2019			UNK	UNK	INSIDE PARK
COL-MWS-1014013	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1014014	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1014015	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1014016	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1014021	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1014023	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1014059	6/18/2019			UNK	UNK	WET WELL? (PAGE 15)
COL-MWS-1014064	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1014069	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1014158	6/18/2019			UNK	UNK	FENCED (AT WASH)
COL-MWS-1014160	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION PG 35)
COL-MWS-1014279	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1014282	6/18/2019			UNK	UNK	UNABLE TO LOCATE (PARKING LOT)

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1014284	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1014285	6/18/2019			UNK	UNK	UNABLE TO LOCATE (PARKING LOT)
COL-MWS-1014287	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1014300	6/18/2019			UNK	UNK	UNABLE TO LOCATE (PAGE 26)
COL-MWS-1014301	6/18/2019			UNK	UNK	UNABLE TO LOCATE (PAGE 26)
COL-MWS-1014302	6/18/2019			UNK	UNK	UNABLE TO LOCATE (PAGE 26)
COL-MWS-1014304	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1014329	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1014336	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1014337	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1014338	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1014339	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1014341	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1014342	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1014343	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1014344	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1014350	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1014807	6/18/2019			UNK	UNK	TRAFFIC (PAGE 12)
COL-MWS-1014822	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION PG 35)
COL-MWS-1014823	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-1015545	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION PG 35)
COL-MWS-1015546	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015547	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015548	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015549	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015550	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015551	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-1015552	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015553	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015554	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015555	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015573	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015838	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015839	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015840	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015841	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015842	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015844	6/18/2019			UNK	UNK	RIVERSIDE COMMUNITY COLLEGE
COL-MWS-1015847	6/18/2019			UNK	UNK	PARKED CAR (COLLEGE PARKING LOT)
COL-MWS-1015849	6/18/2019			UNK	UNK	TRAFFIC (AT NIGHT PARKING LOT ENTRANCE)
COL-MWS-1015850	6/18/2019			UNK	UNK	TRAFFIC (AT NIGHT PARKING LOT ENTRANCE)
COL-MWS-1020023	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1020024	6/18/2019			UNK	UNK	BIKE TRAIL
COL-MWS-1020029	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-1020030	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2000120	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2000122	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2000333	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2000334	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2001366	6/18/2019			UNK	UNK	BURIED
COL-MWS-2002041	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2002121	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2002128	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2002129	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2002130	6/18/2019			UNK	UNK	ON GOLF COURSE

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2002131	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2002132	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2002255	6/18/2019			UNK	UNK	CAR PARKED
COL-MWS-2003003	6/18/2019			UNK	UNK	GOLF COURSE
COL-MWS-2003004	6/18/2019			UNK	UNK	GOLF COURSE
COL-MWS-2003005	6/18/2019			UNK	UNK	GOLF COURSE
COL-MWS-2003006	6/18/2019			UNK	UNK	GOLF COURSE
COL-MWS-2003007	6/18/2019			UNK	UNK	GOLF COURSE
COL-MWS-2003015	6/18/2019			UNK	UNK	IN BACK YARD (PAGE 75)
COL-MWS-2003016	6/18/2019			UNK	UNK	IN BACK YARD (PAGE 75)
COL-MWS-2003017	6/18/2019			UNK	UNK	IN BACK YARD (PAGE 75)
COL-MWS-2003057	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2003063	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2003064	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2003065	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2003066	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2003071	6/18/2019			UNK	UNK	GOLF COURSE
COL-MWS-2003072	6/18/2019			UNK	UNK	GOLF COURSE
COL-MWS-2003073	6/18/2019			UNK	UNK	GOLF COURSE
COL-MWS-2003074	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2006202	6/18/2019			UNK	UNK	BURIED
COL-MWS-2006296	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-2006690	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2006691	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2006692	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2006707	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2006708	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2006709	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2006710	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2006711	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2006747	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2006753	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-2006755	6/18/2019			UNK	UNK	GATED COMMUNITY
COL-MWS-2006756	6/18/2019			UNK	UNK	UNABLE TO LOCATE / PROPERTY
COL-MWS-2006766	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2007349	6/18/2019			UNK	UNK	TRAFFIC (SIGNAL LIGHT PAGE 78)
COL-MWS-2007371	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2007379	6/18/2019			UNK	UNK	TRAFFIC/ BUS ROUTE (BUS MAKES WIDE TURN PAGE 78)
COL-MWS-2008628	6/18/2019			UNK	UNK	EASEMENT
COL-MWS-2008631	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2008632	6/18/2019			UNK	UNK	UNABLE TO LOCATE

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2008633	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2008635	6/18/2019			UNK	UNK	UNABLET TO LOCATE
COL-MWS-2008636	6/18/2019			UNK	UNK	CONSTRUCTION IN PROGRESS
COL-MWS-2008668	6/18/2019			UNK	UNK	CANT OPEN
COL-MWS-2008674	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-2008684	6/18/2019			UNK	UNK	UNABLE TO OPEN
COL-MWS-2008685	6/18/2019			UNK	UNK	UNABLE TO OPEN
COL-MWS-2008693	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2008743	6/18/2019			UNK	UNK	FENCED / NO ACCESS
COL-MWS-2008744	6/18/2019			UNK	UNK	FENCED / NO ACCESS
COL-MWS-2008764	6/18/2019			UNK	UNK	INSIDE BACK YARD
COL-MWS-2009106	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2009107	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2009108	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2009109	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2009110	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2009111	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2009112	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2009113	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2009114	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2009135	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-2009157	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-2010013	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2010030	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2010031	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2010032	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2010047	6/18/2019			UNK	UNK	IN BACK YARD (PAGE 44)
COL-MWS-2010048	6/18/2019			UNK	UNK	PAVED OVER (PAGE 44)
COL-MWS-2010057	6/18/2019			UNK	UNK	IN BACK YARD (PAGE 44)
COL-MWS-2010058	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2010059	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010061	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010062	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010063	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010064	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010065	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010066	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010067	6/18/2019			UNK	UNK	ON GOLF COURSE

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2010068	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010069	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010070	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010071	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2010072	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2010073	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2010074	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2010075	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2010076	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2010077	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2010078	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2010079	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2010093	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2010099	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2010128	6/18/2019			UNK	UNK	IN BACK YARD?
COL-MWS-2010137	6/18/2019			UNK	UNK	GOLF COURSE
COL-MWS-2010142	6/18/2019			UNK	UNK	LOCATED BUT CANNOT REACH WITH CABLE (PAGE 66)
COL-MWS-2010143	6/18/2019			UNK	UNK	LOCATED/ GOLF COURSE (PAGE 66)
COL-MWS-2010155	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010156	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010157	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2010159	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2010160	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2011616	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2011617	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2011806	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2011807	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2012147	6/18/2019			UNK	UNK	BURIED
COL-MWS-2012238	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2012240	6/18/2019			UNK	UNK	TRAFFIC (PAGE 78) ?
COL-MWS-2012243	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-2012334	6/18/2019			UNK	UNK	UNABLE TO LOCATE

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2012360	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2012373	6/18/2019			UNK	UNK	TRAFFIC (AT NIGHT INTERSECTION)
COL-MWS-2012827	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2012832	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2012833	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2012834	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2012835	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2012836	6/18/2019			UNK	UNK	IN BACK YARD?
COL-MWS-2012837	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2012838	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2012839	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2012842	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2012844	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2012845	6/18/2019			UNK	UNK	CANT REACH. (CABLE CANT REACH)
COL-MWS-2013572	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-2013573	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-2013574	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-2013575	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2013576	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2014206	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2014493	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014494	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014495	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014496	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014544	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014545	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014546	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014547	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014548	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2014549	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2014550	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014551	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014552	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014554	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014555	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014556	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014557	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014558	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2014571	6/18/2019			UNK	UNK	MAYBE STORM DRAIN LID RECHECK (UNABLE TO LOCATE)
COL-MWS-2014579	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2014595	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2014610	6/18/2019			UNK	UNK	TRAFFIC (AT NIGHT)
COL-MWS-2014614	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2014615	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2014616	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2014620	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2014944	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2014952	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2014958	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015037	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-2015038	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015039	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015046	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2015052	6/18/2019			UNK	UNK	GOLF COURSE OR BACK YARD
COL-MWS-2015053	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015054	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015058	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-2015060	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015061	6/18/2019			UNK	UNK	ON GOLF COURSE

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-2015062	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015063	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015064	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015065	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015066	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015067	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015068	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015069	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015070	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015071	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-2015072	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2015252	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-2015258	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-2020049	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2020050	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2020051	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-2020052	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-3001699	6/18/2019			UNK	UNK	UNABLE TO LOCATE (AT TREATMENT PLANT)
COL-MWS-3001706	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001707	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001708	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001709	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001710	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001711	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001712	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001713	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001714	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001715	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001716	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001717	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001718	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001719	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001786	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001809	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3001810	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3002042	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-3002125	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3002126	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3002127	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3006334	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3006335	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3006336	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3006337	6/18/2019			UNK	UNK	BIKE TRIAL

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-3006338	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3006339	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3006340	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3006341	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3006343	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3006344	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3006688	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3006689	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3006693	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3006694	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3006695	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-3006700	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-3006701	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-3006702	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-3006703	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-3006704	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3006705	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3006706	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3006712	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-3006716	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3006717	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3006718	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3006719	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3006720	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3006721	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3006723	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-3012156	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3013688	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-3014626	6/18/2019			UNK	UNK	UNABLE TO LOCATE (AT TREATMENT PLANT)
COL-MWS-3014629	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3014630	6/18/2019			UNK	UNK	BIKE TRIAL
COL-MWS-3014653	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3014654	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3014655	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3014657	6/18/2019			UNK	UNK	CLEANOUT
COL-MWS-3014673	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3014681	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-3014690	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-3014691	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-3014942	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3014943	6/18/2019			UNK	UNK	IN BACK YARD

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-3014957	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-3015752	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3015809	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3015810	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3015811	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-3015812	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3015813	6/18/2019			UNK	UNK	ON GOLF COURSE
COL-MWS-3015814	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-3015877	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-3015878	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4000422	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-4000506	6/18/2019			UNK	UNK	UNABLE TO LOCATE (PAGE 121)
COL-MWS-4002802	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4002803	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4002806	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4002807	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4002814	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4002832	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-4003841	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-4003876	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4003903	6/18/2019			UNK	UNK	CANT OPEN
COL-MWS-4004075	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-4004076	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-4004521	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-4004524	6/18/2019			UNK	UNK	UNABLE TO LOCATE (PAGE 132)
COL-MWS-4004532	6/18/2019			UNK	UNK	UNABLE TO LOCATE (POSSIBLY INSIDE PROPERTY PAGE 132)
COL-MWS-4004534	6/18/2019			UNK	UNK	UNABLE TO LOCATE. (POSSIBLY INSIDE PROPERTY PAGE132)
COL-MWS-4004543	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-4004948	6/18/2019			UNK	UNK	UNABLE TO LOCATE IN FIELD
COL-MWS-4004949	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-4004961	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-4004962	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-4004969	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-4004970	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-4004984	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-4005079	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4005081	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4005082	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4005083	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4005329	6/18/2019			UNK	UNK	IN BACK YARD

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4005330	6/18/2019			UNK	UNK	ON PROPERTY
COL-MWS-4005331	6/18/2019			UNK	UNK	ON PROPERTY
COL-MWS-4005387	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-4007182	6/18/2019			UNK	UNK	CLEANOUT
COL-MWS-4007183	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4007186	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4007234	6/18/2019			UNK	UNK	UNABLE TO LOCATE NEXT TO WASH
COL-MWS-4007309	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-4007829	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4007844	6/18/2019			UNK	UNK	CAR PARKED
COL-MWS-4007864	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-4007865	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-4007877	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4007878	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4007882	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4008018	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-4008067	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-4008091	6/18/2019			UNK	UNK	FENCED (FORCED MAIN) LIFT STATION
COL-MWS-4008103	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4008110	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4008117	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4008120	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4008122	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4008131	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-4008319	6/18/2019			UNK	UNK	TRAFFIC (PAGE 132)
COL-MWS-4008320	6/18/2019			UNK	UNK	TRAFFIC (PAGE 132)
COL-MWS-4008321	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-4008325	6/18/2019			UNK	UNK	UNABLET TO REACH / LOCKED PROPERTY
COL-MWS-4008576	6/18/2019			UNK	UNK	TRAFFIC (NIGHT PAGE 135)
COL-MWS-4008609	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4008610	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4008624	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-4008625	6/18/2019			UNK	UNK	IN FIELD UNABLE TO ACCESS
COL-MWS-4008626	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4008721	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-4008723	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-4008763	6/18/2019			UNK	UNK	TRAFFIC (AT NIGHT)
COL-MWS-4008793	6/18/2019			UNK	UNK	UNABLE TO OPEN
COL-MWS-4008801	6/18/2019			UNK	UNK	TRAFFIC (AT NIGHT PAGE 146)
COL-MWS-4008842	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4008849	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4008850	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4008851	6/18/2019			UNK	UNK	NEED TO INSPECT

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4008852	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4008853	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4008854	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4008855	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4008856	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4008858	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4008859	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4008884	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4009025	6/18/2019			UNK	UNK	PRIVATE PROPERTY
COL-MWS-4009026	6/18/2019			UNK	UNK	PRIVATE PROPERTY
COL-MWS-4009034	6/18/2019			UNK	UNK	UNABLE TO OPEN
COL-MWS-4009042	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4009043	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4009044	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4009045	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4009047	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4009048	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4009183	6/18/2019			UNK	UNK	CLEANOUT
COL-MWS-4010727	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4010728	6/18/2019			UNK	UNK	NO ACCESS / NEXT TO WASH
COL-MWS-4010731	6/18/2019			UNK	UNK	PARKED CAR
COL-MWS-4010755	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4010756	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4010757	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4012215	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-4012330	6/18/2019			UNK	UNK	LOCKED
COL-MWS-4012415	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4012425	6/18/2019			UNK	UNK	BURIED MH
COL-MWS-4013051	6/18/2019			UNK	UNK	IN FIELD UNABLE TO ACCESS
COL-MWS-4013052	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-4013070	6/18/2019			UNK	UNK	UNABLE TO LOCATE (PAGE 88)
COL-MWS-4013106	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-4013179	6/18/2019			UNK	UNK	UNABLE TO LOCATE (POSSIBLY PAVED OVER PAGE 112)
COL-MWS-4013234	6/18/2019			UNK	UNK	BURIED
COL-MWS-4013266	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-4013577	6/18/2019			UNK	UNK	IN FIELD UNABLE TO ACCESS
COL-MWS-4013595	6/18/2019			UNK	UNK	IN FIELD UNABLE TO ACCESS
COL-MWS-4013596	6/18/2019			UNK	UNK	IN FIELD UNABLE TO ACCESS
COL-MWS-4013598	6/18/2019			UNK	UNK	IN FIELD UNABLE TO ACCESS
COL-MWS-4013599	6/18/2019			UNK	UNK	IN FIELD UNABLE TO ACCESS
COL-MWS-4014241	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-4014705	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-4015110	6/18/2019			UNK	UNK	UNABLE TO LOCATE / IN PARKING LOT
COL-MWS-4015111	6/18/2019			UNK	UNK	UNABLE TO LOCATE / IN PARKING LOT
COL-MWS-4015269	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-4015278	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-4015292	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-4015293	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-4020070	6/18/2019			UNK	UNK	IN FIELD UNABLE TO ACCESS
COL-MWS-4020071	6/18/2019			UNK	UNK	IN FIELD UNABLE TO ACCESS
COL-MWS-5000460	6/18/2019			UNK	UNK	UNABLE TOLOCATE
COL-MWS-5004308	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-5004318	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-5004319	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-4004323	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-5004342	6/18/2019			UNK	UNK	UNABLE TO LOCATE / IN PARKING LOT
COL-MWS-5004417	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-5004418	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-5004435	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-5004450	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-5005446	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-5005526	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-5005527	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-5005528	6/18/2019			UNK	UNK	IN PROPERTY / UNABLE TO ACCESS
COL-MWS-5005572	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-5007662	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-5007718	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-5008536	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-5010468	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-5010547	6/18/2019			UNK	UNK	BACK YARD/ EASEMENT

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-5011027	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-5011043	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-5011055	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-5011056	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-5011057	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-5011285	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-5011399	6/18/2019			UNK	UNK	BURIED MH
COL-MWS-5011651	6/18/2019			UNK	UNK	TRAFFIC (FLAGGER)
COL-MWS-5012918	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-5013423	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-5013426	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-5013427	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-5013511	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-5013514	6/18/2019			UNK	UNK	BURIED
COL-MWS-5014129	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-5014209	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-5014706	6/18/2019			UNK	UNK	BURIED
COL-MWS-5014711	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-5014712	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-5014714	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-5014716	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-5015073	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-5015078	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-5015079	6/18/2019			UNK	UNK	UNABLET TO OPEN/ NO HOLES
COL-MWS-5015084	6/18/2019			UNK	UNK	NEED TO INSPECT / IN PARKING LOT
COL-MWS-5015085	6/18/2019			UNK	UNK	NEED TO INSPECT / IN PARKING LOT
COL-MWS-5015359	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-5015826	6/18/2019			UNK	UNK	INSIDE PROPERTY / UNABLE TO ACCESS
COL-MWS-5020063	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-6000522	6/18/2019			UNK	UNK	BURIED
COL-MWS-6002405	6/18/2019			UNK	UNK	INSIDE PROPERTY / UNABLE TO ACCESS
COL-MWS-6002413	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-6002417	6/18/2019			UNK	UNK	CLEANOUT
COL-MWS-6002424	6/18/2019			UNK	UNK	INSIDE PROPERTY / UNABLE TO ACCESS
COL-MWS-6002475	6/18/2019			UNK	UNK	TRAFFIC
COL-MWS-6006804	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-6006806	6/18/2019			UNK	UNK	INSIDE WAREHOUSE ? UNABLE TO ACCESS
COL-MWS-6006807	6/18/2019			UNK	UNK	INSIDE WAREHOUSE ? UNABLE TO ACCESS
COL-MWS-6006877	6/18/2019			UNK	UNK	NEED TO INSPECT

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-6007535	6/18/2019			UNK	UNK	PARK / NO ACCESS
COL-MWS-6007536	6/18/2019			UNK	UNK	PARK / NO ACCESS
COL-MWS-6011019	6/18/2019			UNK	UNK	PARK / NO ACCESS
COL-MWS-6014728	6/18/2019			UNK	UNK	INSIDE WAREHOUSE ? UNABLE TO ACCESS
COL-MWS-7000154	6/18/2019			UNK	UNK	IN BACK YARD / UNABLE TO ACCESS
COL-MWS-7000155	6/18/2019			UNK	UNK	IN BACK YARD / UNABLE TO ACCESS
COL-MWS-7000156	6/18/2019			UNK	UNK	IN BACK YARD / UNABLE TO ACCESS
COL-MWS-7000440	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-7000441	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-7001675	6/18/2019			UNK	UNK	UNABLE TO LOCATE
COL-MWS-7001662	6/18/2019			UNK	UNK	EASEMENT / NO ACCESS
COL-MWS-7001664	6/18/2019			UNK	UNK	IN FIELD UNABLE TO ACCESS
COL-MWS-7001684	6/18/2019			UNK	UNK	EASEMENT / NO ACCESS
COL-MWS-7002343	6/18/2019			UNK	UNK	EASEMENT / NO ACCESS
COL-MWS-7002344	6/18/2019			UNK	UNK	EASEMENT / NO ACCESS
COL-MWS-7002355	6/18/2019			UNK	UNK	GATED COMMUNITY
COL-MWS-7002492	6/18/2019			UNK	UNK	BURIED
COL-MWS-7004096	6/18/2019			UNK	UNK	BURIED
COL-MWS-7004102	6/18/2019			UNK	UNK	BACK YARD/ EASEMENT
COL-MWS-7005400	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-7005401	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-7006332	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-7006814	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-7006820	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-7006858	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-7006860	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-7008161	6/18/2019			UNK	UNK	INSIDE PROPERTY / UNABLE TO ACCESS
COL-MWS-7009764	6/18/2019			UNK	UNK	LID CRACK
COL-MWS-7009768	6/18/2019			UNK	UNK	UNABLE TO OPEN
COL-MWS-7009770	6/18/2019			UNK	UNK	IN FIELD / UNABLE TO ACCESS
COL-MWS-7009779	6/18/2019			UNK	UNK	LID BROKEN / UNABLE TO OPEN
COL-MWS-7009780	6/18/2019			UNK	UNK	EASEMENT

Manhole ID	Inspection Date & Time	Structural Quick Rating	O&M Quick Rating	Structural Grade	O&M Grade	Notes
COL-MWS-7011183	6/18/2019			UNK	UNK	BEHIND PROPERTY / UNABLE TO ACCESS
COL-MWS-7011184	6/18/2019			UNK	UNK	PAVED OVER
COL-MWS-7011185	6/18/2019			UNK	UNK	NEED TO INSPECT
COL-MWS-7012676	6/18/2019			UNK	UNK	ON FIELD / UNABLE TO LOCATE
COL-MWS-7013445	6/18/2019			UNK	UNK	IN BACK YARD
COL-MWS-7013749	6/18/2019			UNK	UNK	TRAFFIC (INTERSECTION)
COL-MWS-7013915	6/18/2019			UNK	UNK	CAR PARKED
COL-MWS-7013916	6/18/2019			UNK	UNK	CAR PARKED
COL-MWS-7013919	6/18/2019			UNK	UNK	UNABLE TO ACCESS / EASEMENT
COL-MWS-7013920	6/18/2019			UNK	UNK	CAR PARKED
COL-MWS-7014156	6/18/2019			UNK	UNK	EASEMENT / NO ACCESS
COL-MWS-7015506	6/18/2019			UNK	UNK	UNABLE TO LOCATE

Appendix 2D

GRAVITY MAIN RENEWAL PROJECT AND PHASE

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-5017588	12	252	Line	Root & F.O.G. Control	252	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-3001693	18	146	Line		146	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-5009285	10	348	Line		348	$59,000	1	
COL-PWS-1004515	8	155	Replace	High Frequency Cleaning	155	$60,000	1	
COL-PWS-2003236	8	265	Replace	High Frequency Cleaning	265	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-3001699	8	225	Replace	Root Control	225	$86,000	1	
COL-PWS-1008175	8	768	Replace		768	$292,000	1	
COL-PWS-6016416	12	250	Replace		250	$104,000	1	
COL-PWS-3003835	8	146	Replace		146	$56,000	1	
COL-PWS-3001584	8	153	Replace	Frequent Inspections	153	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-7009842	8	682	Replace	Frequent Inspections	682	$260,000	1	
COL-PWS-2006588	8	600	Replace	High Frequency Cleaning	600	$228,000	1	
COL-PWS-5015764	8	345	Replace	High Frequency Cleaning	345	$131,000	1	
COL-PWS-2003030	8	294	Replace	Root Control	294	$112,000	1	
COL-PWS-7011151	8	268	Replace	Root Control	268	$102,000	1	
COL-PWS-7011283	8	240	Replace		240	$92,000	1	
COL-PWS-7009864	8	229	Replace		229	$87,000	1	
COL-PWS-3003827	8	147	Replace		147	$56,000	1	
COL-PWS-7009878	8	142	Replace		142	$55,000	1	
COL-PWS-5014164	12	327	Replace		327	$136,000	1	
COL-PWS-5012469	8	300	Replace		300	$115,000	1	
COL-PWS-7009843	8	287	Replace		287	$109,000	1	
COL-PWS-7010877	8	275	Replace		275	$105,000	1	
COL-PWS-5009193	8	149	Replace		149	$57,000	1	
COL-PWS-3003631	8	326	Replace		326	$124,000	1	
COL-PWS-1008290	8	300	Replace		300	$115,000	1	
COL-PWS-5009250	8	283	Replace		283	$108,000	1	
COL-PWS-7011008	8	283	Replace		283	$108,000	1	
COL-PWS-7010867	8	86	Replace		86	$33,000	1	
COL-PWS-5017577	8	387	Replace		387	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-5017745	8	193	Replace		193	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-7010929	8	178	Replace		178	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-7012544	8	323	Replace		323	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-6016994	10	195	Replace		195	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-2006588	8	600	Replace		600	$228,000	1	
COL-PWS-1008331	12	376	Replace		376	$156,000	1	
COL-PWS-7009388	8	361	Replace		361	$138,000	1	
COL-PWS-1004556	8	325	Replace		325	$124,000	1	
COL-PWS-4010006	8	289	Replace		289	$110,000	1	
COL-PWS-7011026	8	283	Replace		283	$108,000	1	
COL-PWS-6017444	8	156	Replace		156	$60,000	1	
COL-PWS-2003824	8	154	Replace		154	$59,000	1	
COL-PWS-7010065	8	150	Replace		150	$58,000	1	
COL-PWS-1004780	8	143	Replace		143	$55,000	1	
COL-PWS-7009469	8	137	Replace		137	$53,000	1	
COL-PWS-1008139	8	90	Replace		90	$35,000	1	
COL-PWS-7021820	8	80	Replace		80	$31,000	1	
COL-PWS-1005890	6	209	Replace & Upsize	High Frequency Cleaning	209	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1005680	6	414	Replace & Upsize		414	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1007316	6	247	Replace & Upsize		247	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1005622	6	307	Replace & Upsize	High Frequency Cleaning	307	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1007411	6	336	Replace & Upsize		336	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1007920	6	164	Replace & Upsize		164	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1005818	6	342	Replace & Upsize		342	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1006973	6	376	Replace & Upsize		376	$0	1	Costs attributed to existing City CIP Costs

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-1007038	6	224	Replace & Upsize		224	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1007081	6	121	Replace & Upsize		121	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-2005292	6	494	Replace & Upsize		494	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1007913	6	473	Replace & Upsize		473	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1005518	6	318	Replace & Upsize		318	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-6000154	6	262	Replace & Upsize		262	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-6016546	6	360	Replace & Upsize		360	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-4009158	8	178	Spot Repair(s)	Frequent Inspections	2	$23,000	1	
COL-PWS-2004544	8	42	Spot Repair(s)	High Frequency Cleaning	1	$12,000	1	
COL-PWS-5009236	8	142	Spot Repair(s)	Root Control	1	$12,000	1	
COL-PWS-7000459	8	268	Spot Repair(s)	Frequent Inspections	1	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-3002588	8	290	Spot Repair(s)	High Frequency Cleaning	2	$23,000	1	
COL-PWS-2000729	8	253	Spot Repair(s)	Root Control	2	$23,000	1	
COL-PWS-1004704	8	320	Spot Repair(s)	F.O.G. Control	2	$23,000	1	
COL-PWS-7009538	8	331	Spot Repair(s)		4	$45,000	1	
COL-PWS-1004268	8	325	Spot Repair(s)		2	$23,000	1	
COL-PWS-2011977	24	500	Spot Repair(s)		2	$23,000	1	
COL-PWS-5016530	8	350	Spot Repair(s)		1	$12,000	1	
COL-PWS-5017411	8	243	Spot Repair(s)		2	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-7010946	8	87	Spot Repair(s)		1	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-4010846	12	70	Spot Repair(s)		1	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1004799	36	290	Spot Repair(s)		2	$0	1	Abandoned
COL-PWS-2002026	8	244	Spot Repair(s)		5	$56,000	1	
COL-PWS-2002639	8	311	Spot Repair(s)		4	$45,000	1	
COL-PWS-2002650	8	150	Spot Repair(s)		4	$45,000	1	
COL-PWS-4012931	8	352	Spot Repair(s)		4	$45,000	1	
COL-PWS-5009884	8	325	Spot Repair(s)		4	$45,000	1	
COL-PWS-3001698	8	231	Spot Repair(s)		3	$34,000	1	
COL-PWS-5015291	8	248	Spot Repair(s)		3	$34,000	1	
COL-PWS-2004130	8	351	Spot Repair(s)		2	$23,000	1	
COL-PWS-3001665	8	100	Spot Repair(s)		2	$23,000	1	
COL-PWS-2002942	8	145	Spot Repair(s)		1	$12,000	1	
COL-PWS-1009046	12	406	Spot Repair(s)		1	$12,000	1	
COL-PWS-2002802	21	327	Spot Repair(s)		1	$12,000	1	
COL-PWS-2014127	8	5	Spot Repair(s)		1	$12,000	1	
COL-PWS-2016280	8	46	Spot Repair(s)		1	$12,000	1	
COL-PWS-4009380	8	243	Spot Repair(s)		1	$12,000	1	
COL-PWS-4014485	8	152	Spot Repair(s)		1	$12,000	1	
COL-PWS-7010389	8	120	Spot Repair(s)		1	$12,000	1	
COL-PWS-7015967	8	354	Spot Repair(s)		1	$12,000	1	
COL-PWS-1005587	10	348	Line	Frequent Inspections	348	$59,000	1	
COL-PWS-5015260	10	290	Line	High Frequency Cleaning	290	$49,000	1	
COL-PWS-3003797	21	651	Line		651	$0	1	Abandoned
COL-PWS-1008134	18	272	Line	High Frequency Cleaning	272	$58,000	1	
COL-PWS-2011521	24	350	Line	Root Control	350	$129,000	1	
COL-PWS-3003802	21	610	Line		610	$0	1	Abandoned
COL-PWS-5016703	12	402	Line		402	$72,000	1	
COL-PWS-3002234	10	108	Line		108	$19,000	1	
COL-PWS-5016500	12	386	Line	Root Control	386	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1008470	18	34	Line		34	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-6015334	12	395	Line		395	$71,000	1	
COL-PWS-6016433	12	278	Line		278	$50,000	1	
COL-PWS-5017005	12	206	Line		206	$37,000	1	
COL-PWS-5016328	12	190	Line		190	$35,000	1	
COL-PWS-4003542	8	348	Replace	F.O.G. Control	348	$133,000	1	
COL-PWS-3000440	12	351	Replace	High Frequency Cleaning	351	$145,000	1	
COL-PWS-4009180	8	307	Replace		307	$117,000	1	
COL-PWS-1006013	8	295	Replace		295	$113,000	1	
COL-PWS-1007952	18	228	Replace		228	$110,000	1	

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-1008827	8	286	Replace		286	$109,000	1	
COL-PWS-4003974	8	242	Replace		242	$92,000	1	
COL-PWS-1008034	18	340	Replace	High Frequency Cleaning	340	$164,000	1	
COL-PWS-3002357	8	344	Replace	High Frequency Cleaning	344	$131,000	1	
COL-PWS-3001697	8	317	Replace	High Frequency Cleaning	317	$121,000	1	
COL-PWS-1004696	8	225	Replace	High Frequency Cleaning	225	$86,000	1	
COL-PWS-5009345	8	350	Replace		350	$133,000	1	
COL-PWS-7009719	8	327	Replace		327	$125,000	1	
COL-PWS-7009920	8	300	Replace		300	$115,000	1	
COL-PWS-5012480	8	300	Replace		300	$114,000	1	
COL-PWS-3000881	8	282	Replace		282	$108,000	1	
COL-PWS-3001720	8	277	Replace		277	$106,000	1	
COL-PWS-5009429	8	245	Replace		245	$94,000	1	
COL-PWS-7009925	8	195	Replace		195	$74,000	1	
COL-PWS-7011669	8	69	Replace		69	$27,000	1	
COL-PWS-5012554	8	380	Replace		380	$145,000	1	
COL-PWS-5009731	8	325	Replace		325	$124,000	1	
COL-PWS-4017406	8	302	Replace		302	$115,000	1	
COL-PWS-4017550	8	200	Replace		200	$77,000	1	
COL-PWS-2017977	8	199	Replace		199	$76,000	1	
COL-PWS-5009144	8	347	Replace		347	$132,000	1	
COL-PWS-5009409	8	255	Replace		255	$97,000	1	
COL-PWS-7009468	8	200	Replace		200	$77,000	1	
COL-PWS-7009981	8	160	Replace		160	$61,000	1	
COL-PWS-7009424	8	141	Replace		141	$54,000	1	
COL-PWS-5020754	8	3	Replace		3	$2,000	1	
COL-PWS-7001567	8	149	Replace	Root Control & High Frequency Cleaning	149	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-3001675	8	96	Replace		96	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-7009358	8	54	Replace		54	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-2006148	8	334	Replace		334	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1008912	15	422	Replace		422	$189,000	1	
COL-PWS-4011807	12	433	Replace		433	$179,000	1	
COL-PWS-1008012	18	357	Replace		357	$172,000	1	
COL-PWS-6015509	8	370	Replace		370	$141,000	1	
COL-PWS-1006978	8	359	Replace		359	$137,000	1	
COL-PWS-5009434	8	349	Replace		349	$133,000	1	
COL-PWS-7010070	8	349	Replace		349	$133,000	1	
COL-PWS-2017405	8	347	Replace		347	$132,000	1	
COL-PWS-7009642	8	336	Replace		336	$128,000	1	
COL-PWS-4014511	8	317	Replace		317	$121,000	1	
COL-PWS-5012385	8	297	Replace		297	$113,000	1	
COL-PWS-1008883	8	274	Replace		274	$105,000	1	
COL-PWS-5015874	8	269	Replace		269	$103,000	1	
COL-PWS-3001519	8	265	Replace		265	$101,000	1	
COL-PWS-5009264	8	248	Replace		248	$95,000	1	
COL-PWS-4010397	8	224	Replace		224	$86,000	1	
COL-PWS-1017979	8	218	Replace		218	$84,000	1	
COL-PWS-5012289	10	178	Replace		178	$70,000	1	
COL-PWS-4017664	8	179	Replace		179	$69,000	1	
COL-PWS-4017635	8	168	Replace		168	$64,000	1	
COL-PWS-1008795	8	126	Replace		126	$49,000	1	
COL-PWS-4015621	8	105	Replace		105	$40,000	1	
COL-PWS-4011133	8	40	Replace		40	$16,000	1	
COL-PWS-1005811	6	394	Replace & Upsize		394	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-2012408	6	250	Replace & Upsize		250	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1007285	6	78	Replace & Upsize		78	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1007292	6	143	Replace & Upsize		143	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-2004570	6	255	Replace & Upsize		255	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-6016606	6	20	Replace & Upsize		20	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-3001751	8	315	Spot Repair(s)	Frequent Inspections	1	$12,000	1	
COL-PWS-3003816	10	355	Spot Repair(s)	Root Control	1	$12,000	1	
COL-PWS-5009207	8	350	Spot Repair(s)	Root Control	1	$12,000	1	

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-4008330	12	86	Spot Repair(s)		2	$23,000	1	
COL-PWS-5009676	8	335	Spot Repair(s)	F.O.G. Control	1	$12,000	1	
COL-PWS-1008206	8	300	Spot Repair(s)	Root Control	1	$12,000	1	
COL-PWS-4000058	8	323	Spot Repair(s)	Root Control	1	$12,000	1	
COL-PWS-2003764	8	226	Spot Repair(s)		5	$56,000	1	
COL-PWS-5009448	8	324	Spot Repair(s)		3	$34,000	1	
COL-PWS-1008465	8	290	Spot Repair(s)		1	$12,000	1	
COL-PWS-1007489	8	251	Spot Repair(s)		2	$23,000	1	
COL-PWS-2004945	8	187	Spot Repair(s)	F.O.G. Control	1	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-2005086	8	365	Spot Repair(s)	F.O.G. Control	2	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-4004741	8	398	Spot Repair(s)	F.O.G. Control	2	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-5015787	8	363	Spot Repair(s)	High Frequency Cleaning	2	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1005113	8	462	Spot Repair(s)	High Frequency Cleaning	1	$12,000	1	
COL-PWS-1008533	8	266	Spot Repair(s)		5	$56,000	1	
COL-PWS-6015782	8	360	Spot Repair(s)		5	$56,000	1	
COL-PWS-2003039	21	110	Spot Repair(s)		4	$45,000	1	
COL-PWS-5012615	8	227	Spot Repair(s)		4	$45,000	1	
COL-PWS-5012603	8	103	Spot Repair(s)		3	$34,000	1	
COL-PWS-7009933	8	185	Spot Repair(s)		3	$34,000	1	
COL-PWS-7010063	8	510	Spot Repair(s)		3	$34,000	1	
COL-PWS-4014624	8	255	Spot Repair(s)		2	$23,000	1	
COL-PWS-5009543	8	26	Spot Repair(s)		2	$23,000	1	
COL-PWS-2003033	21	520	Spot Repair(s)		2	$23,000	1	
COL-PWS-5012574	8	152	Spot Repair(s)		2	$23,000	1	
COL-PWS-5015121	8	165	Spot Repair(s)		2	$23,000	1	
COL-PWS-7009923	8	18	Spot Repair(s)		2	$23,000	1	
COL-PWS-1008731	8	320	Spot Repair(s)		1	$12,000	1	
COL-PWS-1008308	8	366	Spot Repair(s)		1	$12,000	1	
COL-PWS-1008350	10	400	Spot Repair(s)		1	$12,000	1	
COL-PWS-1008360	10	187	Spot Repair(s)		1	$12,000	1	
COL-PWS-2003029	8	133	Spot Repair(s)		1	$12,000	1	
COL-PWS-2011779	8	264	Spot Repair(s)		1	$12,000	1	
COL-PWS-4010646	8	240	Spot Repair(s)		1	$12,000	1	
COL-PWS-5012303	8	53	Spot Repair(s)		1	$12,000	1	
COL-PWS-5015417	8	400	Spot Repair(s)		1	$12,000	1	
COL-PWS-5015724	8	112	Spot Repair(s)		1	$12,000	1	
COL-PWS-5016770	8	240	Spot Repair(s)		1	$12,000	1	
COL-PWS-6015203	8	254	Spot Repair(s)		1	$12,000	1	
COL-PWS-6015277	8	474	Spot Repair(s)		1	$12,000	1	
COL-PWS-7001355	8	346	Spot Repair(s)		1	$12,000	1	
COL-PWS-2012690	12	392	Spot Repair(s)		2	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1007914	18	561	Line		561	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-2011241	18	450	Spot Repair(s)	Frequent Inspections	1	$12,000	1	
COL-PWS-4016051	8	286	Replace	Root Control	286	$109,000	1	
COL-PWS-7001892	24	208	Replace	Frequent Inspections	208	$140,000	1	
COL-PWS-4016664	8	186	Replace	Frequent Inspections	186	$71,000	1	
COL-PWS-4014748	8	116	Replace	Frequent Inspections	116	$44,000	1	
COL-PWS-2004170	8	112	Replace	Frequent Inspections	112	$43,000	1	
COL-PWS-1004480	8	85	Replace	Frequent Inspections	85	$33,000	1	
COL-PWS-2016809	8	46	Replace	Frequent Inspections	46	$18,000	1	
COL-PWS-3001153	8	369	Replace	Root Control	369	$141,000	1	
COL-PWS-2000347	8	350	Replace	Root Control	350	$133,000	1	
COL-PWS-4016247	8	300	Replace	Root Control	300	$115,000	1	
COL-PWS-2000318	8	283	Replace	Root Control	283	$108,000	1	
COL-PWS-4016060	8	197	Replace	Root Control	197	$75,000	1	
COL-PWS-2005304	8	289	Replace	Frequent Inspections	289	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1007988	6	159	Replace & Upsize	F.O.G. Control	159	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-1005984	6	320	Replace & Upsize	Frequent Inspections	320	$0	1	Costs attributed to existing City CIP Costs
COL-PWS-6017476	18	305	Line	Root Control	305	$65,000	2	
COL-PWS-1008416	15	476	Line		476	$91,000	2	
COL-PWS-2012687	12	393	Line		393	$0	2	Costs attributed to existing City CIP Costs

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-2012689	12	392	Line		392	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-4013088	8	58	Replace	F.O.G. Control	58	$23,000	2	
COL-PWS-4000159	15	313	Replace	Frequent Inspections	313	$140,000	2	
COL-PWS-4017815	8	322	Replace	Frequent Inspections	322	$123,000	2	
COL-PWS-4012773	8	298	Replace	Frequent Inspections	298	$113,000	2	
COL-PWS-2004366	8	360	Replace	Root Control	360	$137,000	2	
COL-PWS-5011641	8	286	Replace		286	$109,000	2	
COL-PWS-5016419	8	280	Replace		280	$107,000	2	
COL-PWS-1005626	8	278	Replace		278	$106,000	2	
COL-PWS-2004301	8	273	Replace		273	$104,000	2	
COL-PWS-5015364	8	126	Replace	Frequent Inspections	126	$48,000	2	
COL-PWS-2002557	18	609	Replace	Root Control	609	$293,000	2	
COL-PWS-2003277	18	534	Replace	Root Control	534	$257,000	2	
COL-PWS-4017730	8	348	Replace	Root Control	348	$133,000	2	
COL-PWS-3000394	8	325	Replace	Root Control	325	$124,000	2	
COL-PWS-3001551	8	311	Replace	Root Control	311	$118,000	2	
COL-PWS-4014948	8	287	Replace	Root Control	287	$109,000	2	
COL-PWS-3001072	8	204	Replace	Root Control	204	$78,000	2	
COL-PWS-7011136	8	158	Replace	Root Control	158	$60,000	2	
COL-PWS-5009113	8	119	Replace	Root Control	119	$46,000	2	
COL-PWS-3001966	8	220	Replace		220	$84,000	2	
COL-PWS-1008111	8	368	Replace	F.O.G. Control	368	$140,000	2	
COL-PWS-5012654	12	373	Replace		373	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-6016354	8	472	Replace		472	$180,000	2	
COL-PWS-5009621	8	299	Replace		299	$114,000	2	
COL-PWS-6021760	12	299	Replace		299	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-5015496	8	394	Replace		394	$150,000	2	
COL-PWS-5015472	8	274	Replace		274	$104,000	2	
COL-PWS-5009603	8	215	Replace		215	$82,000	2	
COL-PWS-5015437	10	191	Replace		191	$75,000	2	
COL-PWS-1004615	8	126	Replace		126	$49,000	2	
COL-PWS-5015502	8	132	Replace	F.O.G. Control	132	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-5015531	8	356	Replace		356	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-1008473	18	44	Replace		44	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-5015569	8	345	Replace		345	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-7010941	8	179	Replace		179	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-3002307	8	198	Replace		198	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-3003553	18	525	Replace		525	$252,000	2	
COL-PWS-4007204	15	401	Replace		401	$180,000	2	
COL-PWS-7002288	8	419	Replace		419	$160,000	2	
COL-PWS-5015460	8	410	Replace		410	$156,000	2	
COL-PWS-5015938	8	358	Replace		358	$136,000	2	
COL-PWS-1007174	8	355	Replace		355	$135,000	2	
COL-PWS-4010507	8	355	Replace		355	$135,000	2	
COL-PWS-1008778	8	352	Replace		352	$134,000	2	
COL-PWS-5009804	8	350	Replace		350	$133,000	2	
COL-PWS-7010068	8	350	Replace		350	$133,000	2	
COL-PWS-2003828	8	349	Replace		349	$133,000	2	
COL-PWS-4009335	8	337	Replace		337	$128,000	2	
COL-PWS-5015549	8	330	Replace		330	$126,000	2	
COL-PWS-1007340	8	326	Replace		326	$124,000	2	
COL-PWS-2003846	8	320	Replace		320	$122,000	2	
COL-PWS-2003451	8	320	Replace		320	$122,000	2	
COL-PWS-6016040	12	290	Replace		290	$120,000	2	
COL-PWS-5017198	8	314	Replace		314	$120,000	2	
COL-PWS-7011180	8	301	Replace		301	$115,000	2	
COL-PWS-1006869	8	300	Replace		300	$114,000	2	
COL-PWS-3001440	8	297	Replace		297	$113,000	2	
COL-PWS-5015104	8	286	Replace		286	$109,000	2	
COL-PWS-4012526	8	286	Replace		286	$109,000	2	
COL-PWS-5015275	8	284	Replace		284	$108,000	2	
COL-PWS-5016012	8	277	Replace		277	$106,000	2	
COL-PWS-1007668	8	275	Replace		275	$105,000	2	

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-3001905	8	275	Replace		275	$105,000	2	
COL-PWS-5014955	8	263	Replace		263	$100,000	2	
COL-PWS-7018005	8	261	Replace		261	$100,000	2	
COL-PWS-5016900	8	256	Replace		256	$98,000	2	
COL-PWS-5017077	8	253	Replace		253	$97,000	2	
COL-PWS-5017242	8	255	Replace		255	$97,000	2	
COL-PWS-5009176	8	252	Replace		252	$96,000	2	
COL-PWS-4010377	8	248	Replace		248	$95,000	2	
COL-PWS-5015190	8	246	Replace		246	$94,000	2	
COL-PWS-1004356	8	242	Replace		242	$92,000	2	
COL-PWS-1004485	8	241	Replace		241	$92,000	2	
COL-PWS-5015241	8	223	Replace		223	$85,000	2	
COL-PWS-5015276	8	223	Replace		223	$85,000	2	
COL-PWS-4000148	8	206	Replace		206	$79,000	2	
COL-PWS-2003597	8	182	Replace		182	$70,000	2	
COL-PWS-5015911	8	171	Replace		171	$65,000	2	
COL-PWS-5015632	8	152	Replace		152	$59,000	2	
COL-PWS-5009557	8	150	Replace		150	$58,000	2	
COL-PWS-2020243	8	150	Replace		150	$57,000	2	
COL-PWS-6017447	8	128	Replace		128	$49,000	2	
COL-PWS-4020977	8	124	Replace		124	$48,000	2	
COL-PWS-3001477	8	119	Replace		119	$46,000	2	
COL-PWS-5009425	8	53	Replace		53	$21,000	2	
COL-PWS-5012428	8	42	Replace		42	$17,000	2	
COL-PWS-1005778	6	240	Replace & Upsize	High Frequency Cleaning	240	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-1008498	6	282	Replace & Upsize		282	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-1007852	6	477	Replace & Upsize		477	$0	2	Costs attributed to existing City CIP Costs
COL-PWS-4010841	8	365	Spot Repair(s)	Root & F.O.G. Control	1	$12,000	2	
COL-PWS-2003389	8	141	Spot Repair(s)	Root Control	1	$12,000	2	
COL-PWS-5010857	8	256	Spot Repair(s)	Frequent Inspections	1	$12,000	2	
COL-PWS-2020234	8	32	Spot Repair(s)	Root Control	1	$12,000	2	
COL-PWS-7016671	8	250	Spot Repair(s)	Root Control	1	$12,000	2	
COL-PWS-1005631	10	270	Spot Repair(s)		4	$45,000	2	
COL-PWS-5009079	8	234	Spot Repair(s)		1	$12,000	2	
COL-PWS-5011154	12	452	Spot Repair(s)		1	$12,000	2	
COL-PWS-2002960	8	333	Spot Repair(s)		3	$34,000	2	
COL-PWS-1007488	8	350	Spot Repair(s)		2	$23,000	2	
COL-PWS-2003141	8	94	Spot Repair(s)		1	$12,000	2	
COL-PWS-2016757	8	187	Spot Repair(s)		1	$12,000	2	
COL-PWS-2001242	10	132	Spot Repair(s)		1	$12,000	2	
COL-PWS-2001276	27	248	Spot Repair(s)		1	$12,000	2	
COL-PWS-2001333	18	181	Spot Repair(s)		1	$12,000	2	
COL-PWS-2002604	24	208	Spot Repair(s)		1	$12,000	2	
COL-PWS-2003714	8	171	Spot Repair(s)		1	$12,000	2	
COL-PWS-2017024	8	327	Spot Repair(s)		1	$12,000	2	
COL-PWS-4014333	8	159	Spot Repair(s)		1	$12,000	2	
COL-PWS-5009239	8	249	Spot Repair(s)		1	$12,000	2	
COL-PWS-5009387	8	292	Spot Repair(s)		1	$12,000	2	
COL-PWS-5009545	8	259	Spot Repair(s)		1	$12,000	2	
COL-PWS-6009510	10	236	Spot Repair(s)		1	$12,000	2	
COL-PWS-7004079	8	276	Spot Repair(s)		1	$12,000	2	
COL-PWS-5009279	8	350	Replace	Root Control	350	$133,000	2	
COL-PWS-4017161	10	354	Replace	Root Control	354	$139,000	2	
COL-PWS-1007333	8	328	Replace	Root Control	328	$125,000	2	
COL-PWS-4017502	8	312	Replace	Root Control	312	$119,000	2	
COL-PWS-2004196	8	258	Replace	Root Control	258	$98,000	2	
COL-PWS-2000608	8	250	Replace	Root Control	250	$95,000	2	
COL-PWS-2001039	8	247	Replace	Root Control	247	$94,000	2	
COL-PWS-3002010	8	175	Replace	Root Control	175	$67,000	2	
COL-PWS-4016257	8	135	Replace	Root Control	135	$52,000	2	
COL-PWS-1005785	6	195		Clean & Inspect				
COL-PWS-2017432	UNK	UNK		Clean & Inspect				
COL-PWS-7002620	42	364		Clean & Inspect				
COL-PWS-7002821	42	369		Clean & Inspect				
COL-PWS-3000314	27	96		Clean & Inspect				
COL-PWS-3021361	36	440		Clean & Inspect				
COL-PWS-3021377	36	404		Clean & Inspect				
COL-PWS-3021386	36	147		Clean & Inspect				
COL-PWS-7002090	UNK	UNK		Clean & Inspect				

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-7003975	8	339		Clean & Inspect				
COL-PWS-7021382	27	360		Clean & Inspect				
COL-PWS-7021389	27	360		Clean & Inspect				
COL-PWS-4009294	8	304		Corrosion Control				
COL-PWS-4014584	8	357		F.O.G. Control				
COL-PWS-1007701	18	20		Gain Access & Inspect				
COL-PWS-6017678	21	49		Gain Access & Inspect				
COL-PWS-1004456	8	290		Gain Access & Inspect				
COL-PWS-1004676	8	130		Gain Access & Inspect				
COL-PWS-1004682	8	69		Gain Access & Inspect				
COL-PWS-1005125	6	47		Gain Access & Inspect				
COL-PWS-1006494	UNK	UNK		Gain Access & Inspect				
COL-PWS-1006498	UNK	341		Gain Access & Inspect				
COL-PWS-1007028	18	265		Gain Access & Inspect				
COL-PWS-1007031	33	264		Gain Access & Inspect				
COL-PWS-1007077	18	149		Gain Access & Inspect				
COL-PWS-1007091	33	218		Gain Access & Inspect				
COL-PWS-1007154	18	317		Gain Access & Inspect				
COL-PWS-1007176	6	132		Gain Access & Inspect				
COL-PWS-1007178	33	282		Gain Access & Inspect				
COL-PWS-1007207	6	87		Gain Access & Inspect				
COL-PWS-1007233	6	70		Gain Access & Inspect				
COL-PWS-1007237	18	261		Gain Access & Inspect				
COL-PWS-1007239	33	228		Gain Access & Inspect				
COL-PWS-1007250	6	208		Gain Access & Inspect				
COL-PWS-1007279	18	162		Gain Access & Inspect				
COL-PWS-1007373	18	318		Gain Access & Inspect				
COL-PWS-1007388	33	529		Gain Access & Inspect				
COL-PWS-1007410	18	218		Gain Access & Inspect				
COL-PWS-1007455	33	430		Gain Access & Inspect				
COL-PWS-1007481	8	376		Gain Access & Inspect				
COL-PWS-1007483	18	392		Gain Access & Inspect				
COL-PWS-1007567	18	351		Gain Access & Inspect				
COL-PWS-1007570	33	480		Gain Access & Inspect				
COL-PWS-1007611	18	322		Gain Access & Inspect				
COL-PWS-1007617	30	346		Gain Access & Inspect				
COL-PWS-1007702	30	401		Gain Access & Inspect				
COL-PWS-1007750	36	676		Gain Access & Inspect				
COL-PWS-1007791	12	550		Gain Access & Inspect				
COL-PWS-1008029	36	400		Gain Access & Inspect				
COL-PWS-2000786	27	303		Gain Access & Inspect				
COL-PWS-2000807	27	389		Gain Access & Inspect				
COL-PWS-2000868	27	204		Gain Access & Inspect				
COL-PWS-2000873	27	342		Gain Access & Inspect				
COL-PWS-2000880	27	150		Gain Access & Inspect				
COL-PWS-2000919	27	350		Gain Access & Inspect				
COL-PWS-2001007	24	257		Gain Access & Inspect				
COL-PWS-2001178	18	330		Gain Access & Inspect				
COL-PWS-2001185	15	288		Gain Access & Inspect				
COL-PWS-2001238	15	189		Gain Access & Inspect				
COL-PWS-2001250	15	170		Gain Access & Inspect				
COL-PWS-2001261	8	139		Gain Access & Inspect				
COL-PWS-2001263	8	371		Gain Access & Inspect				
COL-PWS-2001332	8	250		Gain Access & Inspect				
COL-PWS-2001363	8	148		Gain Access & Inspect				
COL-PWS-2001393	8	303		Gain Access & Inspect				
COL-PWS-2001394	8	194		Gain Access & Inspect				
COL-PWS-2001483	8	127		Gain Access & Inspect				
COL-PWS-2001502	27	243		Gain Access & Inspect				
COL-PWS-2001527	27	252		Gain Access & Inspect				
COL-PWS-2001540	27	90		Gain Access & Inspect				
COL-PWS-2001560	27	178		Gain Access & Inspect				
COL-PWS-2001615	8	229		Gain Access & Inspect				
COL-PWS-2001657	27	313		Gain Access & Inspect				
COL-PWS-2001688	8	242		Gain Access & Inspect				
COL-PWS-2001764	UNK	UNK		Gain Access & Inspect				
COL-PWS-2001810	27	133		Gain Access & Inspect				
COL-PWS-2001842	8	369		Gain Access & Inspect				
COL-PWS-2001907	27	76		Gain Access & Inspect				
COL-PWS-2001927	27	81		Gain Access & Inspect				
COL-PWS-2001949	8	353		Gain Access & Inspect				
COL-PWS-2001977	15	200		Gain Access & Inspect				

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-2002022	8	350		Gain Access & Inspect				
COL-PWS-2002130	21	246		Gain Access & Inspect				
COL-PWS-2002305	21	287		Gain Access & Inspect				
COL-PWS-2002478	21	177		Gain Access & Inspect				
COL-PWS-2002508	18	112		Gain Access & Inspect				
COL-PWS-2003923	21	405		Gain Access & Inspect				
COL-PWS-2003944	8	102		Gain Access & Inspect				
COL-PWS-2003959	8	76		Gain Access & Inspect				
COL-PWS-2004026	10	31		Gain Access & Inspect				
COL-PWS-2004070	21	320		Gain Access & Inspect				
COL-PWS-2004086	10	240		Gain Access & Inspect				
COL-PWS-2004092	8	129		Gain Access & Inspect				
COL-PWS-2004109	8	173		Gain Access & Inspect				
COL-PWS-2004141	8	173		Gain Access & Inspect				
COL-PWS-2004186	10	234		Gain Access & Inspect				
COL-PWS-2004247	8	321		Gain Access & Inspect				
COL-PWS-2004250	8	250		Gain Access & Inspect				
COL-PWS-2004346	8	328		Gain Access & Inspect				
COL-PWS-2004371	8	278		Gain Access & Inspect				
COL-PWS-2004444	8	207		Gain Access & Inspect				
COL-PWS-2004447	8	121		Gain Access & Inspect				
COL-PWS-2004475	8	293		Gain Access & Inspect				
COL-PWS-2012258	UNK	UNK		Gain Access & Inspect				
COL-PWS-2012543	6	358		Gain Access & Inspect				
COL-PWS-2012730	15	223		Gain Access & Inspect				
COL-PWS-2012734	21	76		Gain Access & Inspect				
COL-PWS-2020367	18	177		Gain Access & Inspect				
COL-PWS-2021013	24	246		Gain Access & Inspect				
COL-PWS-3003657	8	304		Gain Access & Inspect				
COL-PWS-3003674	8	312		Gain Access & Inspect				
COL-PWS-3003707	8	301		Gain Access & Inspect				
COL-PWS-3003740	8	178		Gain Access & Inspect				
COL-PWS-3003914	8	26		Gain Access & Inspect				
COL-PWS-3003918	8	42		Gain Access & Inspect				
COL-PWS-3003948	UNK	UNK		Gain Access & Inspect				
COL-PWS-3003951	UNK	UNK		Gain Access & Inspect				
COL-PWS-3003993	8	60		Gain Access & Inspect				
COL-PWS-3004648	24	150		Gain Access & Inspect				
COL-PWS-3004867	24	377		Gain Access & Inspect				
COL-PWS-3004963	UNK	UNK		Gain Access & Inspect				
COL-PWS-3017932	8	100		Gain Access & Inspect				
COL-PWS-4010750	8	317		Gain Access & Inspect				
COL-PWS-4011436	8	104		Gain Access & Inspect				
COL-PWS-4011688	8	32		Gain Access & Inspect				
COL-PWS-4014954	8	200		Gain Access & Inspect				
COL-PWS-4015253	8	278		Gain Access & Inspect				
COL-PWS-4016254	8	61		Gain Access & Inspect				
COL-PWS-4016291	10	158		Gain Access & Inspect				
COL-PWS-4016380	10	407		Gain Access & Inspect				
COL-PWS-4016950	10	296		Gain Access & Inspect				
COL-PWS-5009083	8	3		Gain Access & Inspect				
COL-PWS-5009084	8	38		Gain Access & Inspect				
COL-PWS-5009102	8	36		Gain Access & Inspect				
COL-PWS-5009139	8	232		Gain Access & Inspect				
COL-PWS-5015570	8	75		Gain Access & Inspect				
COL-PWS-6017443	8	30		Gain Access & Inspect				
COL-PWS-6017446	UNK	3		Gain Access & Inspect				
COL-PWS-6017599	12	98		Gain Access & Inspect				
COL-PWS-6017614	6	42		Gain Access & Inspect				
COL-PWS-6017618	6	219		Gain Access & Inspect				
COL-PWS-6017712	21	425		Gain Access & Inspect				
COL-PWS-7001549	10	303		Gain Access & Inspect				
COL-PWS-7001753	8	317		Gain Access & Inspect				
COL-PWS-7001827	8	300		Gain Access & Inspect				
COL-PWS-7001996	18	453		Gain Access & Inspect				
COL-PWS-7003022	8	175		Gain Access & Inspect				
COL-PWS-7016917	8	145		Gain Access & Inspect				
COL-PWS-1004407	24	246		Gain Access & Inspect				
COL-PWS-1004411	45	1,137		Gain Access & Inspect				
COL-PWS-1004440	24	183		Gain Access & Inspect				
COL-PWS-1004442	24	586		Gain Access & Inspect				
COL-PWS-1004445	24	237		Gain Access & Inspect				

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-1004454	24	313		Gain Access & Inspect				
COL-PWS-1004459	39	1147		Gain Access & Inspect				
COL-PWS-1004498	24	444		Gain Access & Inspect				
COL-PWS-1004517	24	52		Gain Access & Inspect				
COL-PWS-1004562	24	369		Gain Access & Inspect				
COL-PWS-1004563	24	268		Gain Access & Inspect				
COL-PWS-1004578	24	531		Gain Access & Inspect				
COL-PWS-1004582	39	1162		Gain Access & Inspect				
COL-PWS-1004600	24	372		Gain Access & Inspect				
COL-PWS-1004605	39	870		Gain Access & Inspect				
COL-PWS-1004629	24	415		Gain Access & Inspect				
COL-PWS-1004699	24	575		Gain Access & Inspect				
COL-PWS-1004717	24	46		Gain Access & Inspect				
COL-PWS-1004769	24	426		Gain Access & Inspect				
COL-PWS-1004778	45	447		Gain Access & Inspect				
COL-PWS-1004827	24	205		Gain Access & Inspect				
COL-PWS-1004837	24	403		Gain Access & Inspect				
COL-PWS-1004844	24	70		Gain Access & Inspect				
COL-PWS-1004858	39	1,101		Gain Access & Inspect				
COL-PWS-1004870	24	300		Gain Access & Inspect				
COL-PWS-1004876	45	286		Gain Access & Inspect				
COL-PWS-1004903	39	707		Gain Access & Inspect				
COL-PWS-1004935	24	616		Gain Access & Inspect				
COL-PWS-1004943	24	167		Gain Access & Inspect				
COL-PWS-1004944	45	963		Gain Access & Inspect				
COL-PWS-1004979	24	178		Gain Access & Inspect				
COL-PWS-1005032	30	398		Gain Access & Inspect				
COL-PWS-1005035	45	436		Gain Access & Inspect				
COL-PWS-1005409	24	514		Gain Access & Inspect				
COL-PWS-1005410	36	2003		Gain Access & Inspect				
COL-PWS-1005642	33	1,005		Gain Access & Inspect				
COL-PWS-1005817	24	1880		Gain Access & Inspect				
COL-PWS-1005819	33	859		Gain Access & Inspect				
COL-PWS-1006015	27	132		Gain Access & Inspect				
COL-PWS-2003842	8	13		Gain Access & Inspect				
COL-PWS-2003843	21	172		Gain Access & Inspect				
COL-PWS-2003939	8	386		Gain Access & Inspect				
COL-PWS-2003956	21	229		Gain Access & Inspect				
COL-PWS-2003979	21	183		Gain Access & Inspect				
COL-PWS-2003987	10	79		Gain Access & Inspect				
COL-PWS-2003988	24	242		Gain Access & Inspect				
COL-PWS-2003991	21	258		Gain Access & Inspect				
COL-PWS-2003992	21	499		Gain Access & Inspect				
COL-PWS-2004001	21	584		Gain Access & Inspect				
COL-PWS-2004007	24	166		Gain Access & Inspect				
COL-PWS-2004010	10	194		Gain Access & Inspect				
COL-PWS-2004016	21	196		Gain Access & Inspect				
COL-PWS-2004024	21	442		Gain Access & Inspect				
COL-PWS-2004029	8	10		Gain Access & Inspect				
COL-PWS-2004031	21	312		Gain Access & Inspect				
COL-PWS-2004045	10	189		Gain Access & Inspect				
COL-PWS-2004048	10	26		Gain Access & Inspect				
COL-PWS-2004050	21	740		Gain Access & Inspect				
COL-PWS-2004051	21	187		Gain Access & Inspect				
COL-PWS-2004053	10	221		Gain Access & Inspect				
COL-PWS-2004055	10	237		Gain Access & Inspect				
COL-PWS-2004059	10	216		Gain Access & Inspect				
COL-PWS-2004063	21	240		Gain Access & Inspect				
COL-PWS-2004071	21	250		Gain Access & Inspect				
COL-PWS-2004072	8	312		Gain Access & Inspect				
COL-PWS-2004087	24	236		Gain Access & Inspect				
COL-PWS-2004184	24	237		Gain Access & Inspect				
COL-PWS-2004285	27	195		Gain Access & Inspect				
COL-PWS-2021012	8	185		Gain Access & Inspect				
COL-PWS-3003757	33	188		Gain Access & Inspect				
COL-PWS-3003770	18	10		Gain Access & Inspect				
COL-PWS-3003774	18	48		Gain Access & Inspect				
COL-PWS-3003805	21	107		Gain Access & Inspect				
COL-PWS-3003807	18	118		Gain Access & Inspect				
COL-PWS-3003808	18	73		Gain Access & Inspect				
COL-PWS-3003809	18	453		Gain Access & Inspect				
COL-PWS-3003952	10	233		Gain Access & Inspect				

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-3004707	24	384		Gain Access & Inspect				
COL-PWS-3004710	24	207		Gain Access & Inspect				
COL-PWS-3004722	45	663		Gain Access & Inspect				
COL-PWS-3004776	24	58		Gain Access & Inspect				
COL-PWS-3004779	24	392		Gain Access & Inspect				
COL-PWS-3004882	24	330		Gain Access & Inspect				
COL-PWS-3004893	24	326		Gain Access & Inspect				
COL-PWS-3004894	45	670		Gain Access & Inspect				
COL-PWS-3004898	24	356		Gain Access & Inspect				
COL-PWS-3004907	24	343		Gain Access & Inspect				
COL-PWS-3004927	45	1,362		Gain Access & Inspect				
COL-PWS-3004953	24	109		Gain Access & Inspect				
COL-PWS-3004960	24	341		Gain Access & Inspect				
COL-PWS-3004981	24	499		Gain Access & Inspect				
COL-PWS-3004990	45	1,197		Gain Access & Inspect				
COL-PWS-3004992	24	199		Gain Access & Inspect				
COL-PWS-3005007	45	910		Gain Access & Inspect				
COL-PWS-3005017	24	370		Gain Access & Inspect				
COL-PWS-3005018	24	430		Gain Access & Inspect				
COL-PWS-3005023	45	682		Gain Access & Inspect				
COL-PWS-3005063	24	159		Gain Access & Inspect				
COL-PWS-3005064	45	496		Gain Access & Inspect				
COL-PWS-3018061	24	44		Gain Access & Inspect				
COL-PWS-0330929	UNK	UNK		Inspect				
COL-PWS-1008183	4	10		Inspect				
COL-PWS-1008184	8	99		Inspect				
COL-PWS-1008463	18	152		Inspect				
COL-PWS-1020055	12	297		Inspect				
COL-PWS-2011839	8	161		Inspect				
COL-PWS-2014927	8	254		Inspect				
COL-PWS-2015720	8	73		Inspect				
COL-PWS-2016976	42	500		Inspect				
COL-PWS-2017500	8	41		Inspect				
COL-PWS-2017576	8	37		Inspect				
COL-PWS-3021741	51	490		Inspect				
COL-PWS-4009567	8	208		Inspect				
COL-PWS-4009633	8	205		Inspect				
COL-PWS-1008397	15	14		Inspect Siphon				
COL-PWS-2014393	20	99		Inspect Siphon				
COL-PWS-2014431	42	14		Inspect Siphon				
COL-PWS-1004609	24	29		Locate Line & Inspect				
COL-PWS-1004625	24	139		Locate Line & Inspect				
COL-PWS-1008943	8	263		Locate Line & Inspect				
COL-PWS-1009009	8	298		Locate Line & Inspect				
COL-PWS-2003424	8	165		Locate Line & Inspect				
COL-PWS-2004288	10	193		Locate Line & Inspect				
COL-PWS-2004376	10	283		Locate Line & Inspect				
COL-PWS-2004618	18	372		Locate Line & Inspect				
COL-PWS-3004565	24	157		Locate Line & Inspect				
COL-PWS-6014167	4	154		Locate Line & Inspect				
COL-PWS-6014176	4	134		Locate Line & Inspect				
COL-PWS-2004378	27	280		Locate Line & Inspect				
COL-PWS-2004481	27	249		Locate Line & Inspect				
COL-PWS-2004482	10	261		Locate Line & Inspect				
COL-PWS-2004587	24	227		Locate Line & Inspect				
COL-PWS-1005327	UNK	210		Locate Manhole & Inspect				
COL-PWS-1005108	UNK	28		Locate Manhole & Inspect				
COL-PWS-1005121	UNK	25		Locate Manhole & Inspect				
COL-PWS-1005152	6	96		Locate Manhole & Inspect				
COL-PWS-1005187	UNK	271		Locate Manhole & Inspect				
COL-PWS-1005265	UNK	526		Locate Manhole & Inspect				
COL-PWS-1005371	8	146		Locate Manhole & Inspect				
COL-PWS-1005625	6	144		Locate Manhole & Inspect				
COL-PWS-1005637	6	106		Locate Manhole & Inspect				
COL-PWS-1020162	12	263		Locate Manhole & Inspect				
COL-PWS-2017159	8	188		Locate Manhole & Inspect				
COL-PWS-2017314	8	295		Locate Manhole & Inspect				
COL-PWS-2017316	8	6		Locate Manhole & Inspect				
COL-PWS-2017669	UNK	UNK		Locate Manhole & Inspect				
COL-PWS-2017851	UNK	UNK		Locate Manhole & Inspect				
COL-PWS-2017955	8	271		Locate Manhole & Inspect				
COL-PWS-4009147	12	199		Locate Manhole & Inspect				

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-7009466	8	150		Locate Manhole & Inspect				
COL-PWS-7009643	8	337		Locate Manhole & Inspect				
COL-PWS-1004885	8	143		Locate Manhole & Inspect				
COL-PWS-1004929	12	9		Locate Manhole & Inspect				
COL-PWS-1005002	12	345		Locate Manhole & Inspect				
COL-PWS-1005014	27	393		Locate Manhole & Inspect				
COL-PWS-1005069	12	242		Locate Manhole & Inspect				
COL-PWS-1005133	27	120		Locate Manhole & Inspect				
COL-PWS-1005155	12	929		Locate Manhole & Inspect				
COL-PWS-1005173	27	178		Locate Manhole & Inspect				
COL-PWS-1005227	24	152		Locate Manhole & Inspect				
COL-PWS-1005286	27	654		Locate Manhole & Inspect				
COL-PWS-1005426	12	405		Locate Manhole & Inspect				
COL-PWS-1005534	27	44		Locate Manhole & Inspect				
COL-PWS-1005544	27	163		Locate Manhole & Inspect				
COL-PWS-1005571	12	20		Locate Manhole & Inspect				
COL-PWS-1004849	8	295		Locate Manhole & Inspect				
COL-PWS-2000120	8	149		High Frequency Cleaning				
COL-PWS-4010154	8	350		High Frequency Cleaning				
COL-PWS-6017238	15	298		High Frequency Cleaning				
COL-PWS-2006383	12	450		Frequent Inspections				
COL-PWS-4012631	8	134		Frequent Inspections				
COL-PWS-4012680	8	154		Frequent Inspections				
COL-PWS-4014818	8	350		Root Control				
COL-PWS-4014990	8	189		Root Control				
COL-PWS-2013508	8	83		High Frequency Cleaning				
COL-PWS-4014664	12	323		High Frequency Cleaning				
COL-PWS-4012817	8	299		High Frequency Cleaning				
COL-PWS-4013162	10	131		High Frequency Cleaning				
COL-PWS-4014743	12	301		High Frequency Cleaning				
COL-PWS-4016632	8	133		High Frequency Cleaning				
COL-PWS-5015406	8	130		High Frequency Cleaning				
COL-PWS-2002309	8	375		Root Control				
COL-PWS-5009353	8	326		Root Control				
COL-PWS-2004153	8	313		Root Control				
COL-PWS-2004198	8	360		Root Control				
COL-PWS-4012954	8	350		Root Control				
COL-PWS-2003262	8	353		F.O.G. Control				
COL-PWS-4000005	8	265		F.O.G. Control				
COL-PWS-1007682	10	76		F.O.G. Control				
COL-PWS-4002785	8	286		F.O.G. Control				
COL-PWS-7001888	18	211		F.O.G. Control				
COL-PWS-3003617	8	205		High Frequency Cleaning				
COL-PWS-4011130	8	391		High Frequency Cleaning				
COL-PWS-4011423	8	375		High Frequency Cleaning				
COL-PWS-4015490	8	354		High Frequency Cleaning				
COL-PWS-1006832	8	325		High Frequency Cleaning				
COL-PWS-1008877	8	155		High Frequency Cleaning				
COL-PWS-2000043	8	261		High Frequency Cleaning				
COL-PWS-2000454	8	250		High Frequency Cleaning				
COL-PWS-3003825	8	34		High Frequency Cleaning				
COL-PWS-4010020	8	342		High Frequency Cleaning				
COL-PWS-4017770	8	60		High Frequency Cleaning				
COL-PWS-6017466	18	183		High Frequency Cleaning				
COL-PWS-2000961	8	349		Root Control				
COL-PWS-2001159	18	202		Root Control				
COL-PWS-2003942	8	348		Root Control				
COL-PWS-3001987	8	65		Root Control				
COL-PWS-6013250	8	187		Root Control				
COL-PWS-4014598	8	114		F.O.G. Control				
COL-PWS-1008297	10	242		F.O.G. Control				
COL-PWS-1008515	6	282		F.O.G. Control				
COL-PWS-1008767	8	239		F.O.G. Control				
COL-PWS-1015063	18	108		F.O.G. Control				
COL-PWS-4009390	8	293		F.O.G. Control				
COL-PWS-4013677	8	210		F.O.G. Control				
COL-PWS-5017598	24	314		Frequent Inspections				
COL-PWS-7000482	8	348		Frequent Inspections				
COL-PWS-6016817	15	247		Frequent Inspections				
COL-PWS-7010357	8	330		Frequent Inspections				
COL-PWS-1005667	10	100		Frequent Inspections				
COL-PWS-2003061	8	298		Frequent Inspections				

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-2003229	8	330		Frequent Inspections				
COL-PWS-3003744	8	35		Frequent Inspections				
COL-PWS-4009116	8	275		Frequent Inspections				
COL-PWS-4009231	8	40		Frequent Inspections				
COL-PWS-4009774	8	210		Frequent Inspections				
COL-PWS-4010127	8	309		Frequent Inspections				
COL-PWS-4010425	8	313		Frequent Inspections				
COL-PWS-4010719	8	275		Frequent Inspections				
COL-PWS-4014010	8	256		Frequent Inspections				
COL-PWS-4014657	8	305		Frequent Inspections				
COL-PWS-5009108	8	150		Frequent Inspections				
COL-PWS-5017746	8	317		Frequent Inspections				
COL-PWS-6015199	8	211		Frequent Inspections				
COL-PWS-6016614	12	279		Frequent Inspections				
COL-PWS-7001794	8	167		Frequent Inspections				
COL-PWS-1008450	24	398		High Frequency Cleaning				
COL-PWS-1008783	8	80		High Frequency Cleaning				
COL-PWS-1009036	8	189		High Frequency Cleaning				
COL-PWS-2013158	30	400		High Frequency Cleaning				
COL-PWS-4009304	8	331		High Frequency Cleaning				
COL-PWS-4014212	8	298		High Frequency Cleaning				
COL-PWS-4017863	12	446		High Frequency Cleaning				
COL-PWS-7021383	30	348		High Frequency Cleaning				
COL-PWS-1008847	8	350		High Frequency Cleaning				
COL-PWS-1009023	8	366		High Frequency Cleaning				
COL-PWS-2001322	18	143		High Frequency Cleaning				
COL-PWS-2001371	27	193		High Frequency Cleaning				
COL-PWS-2012746	18	498		High Frequency Cleaning				
COL-PWS-2016790	8	306		High Frequency Cleaning				
COL-PWS-2021661	8	351		High Frequency Cleaning				
COL-PWS-4008480	12	201		High Frequency Cleaning				
COL-PWS-4010223	12	450		High Frequency Cleaning				
COL-PWS-4010544	8	98		High Frequency Cleaning				
COL-PWS-4011197	8	355		High Frequency Cleaning				
COL-PWS-4011458	8	142		High Frequency Cleaning				
COL-PWS-4012882	8	170		High Frequency Cleaning				
COL-PWS-4014484	8	234		High Frequency Cleaning				
COL-PWS-4016693	8	350		High Frequency Cleaning				
COL-PWS-4016882	8	246		High Frequency Cleaning				
COL-PWS-1005924	27	571		High Frequency Cleaning				
COL-PWS-2000924	8	333		Root Control				
COL-PWS-2001280	18	205		Root Control				
COL-PWS-2001400	8	265		Root Control				
COL-PWS-2001873	8	195		Root Control				
COL-PWS-2002187	8	285		Root Control				
COL-PWS-3000707	8	229		Root Control				
COL-PWS-3003551	8	151		Root Control				
COL-PWS-3003741	8	96		Root Control				
COL-PWS-5009187	8	350		Root Control				
COL-PWS-7001690	8	316		Root Control				
0	10	280		Root Control				
COL-PWS-1004661	8	101		Root Control				
COL-PWS-1004692	36	309		Root Control				
COL-PWS-2000388	8	270		Root Control				
COL-PWS-2000711	8	300		Root Control				
COL-PWS-2001364	8	233		Root Control				
COL-PWS-2001529	15	194		Root Control				
COL-PWS-2001818	15	206		Root Control				
COL-PWS-2001825	15	250		Root Control				
COL-PWS-2003310	8	174		Root Control				
COL-PWS-2003447	8	160		Root Control				
COL-PWS-2003773	8	175		Root Control				
COL-PWS-2004028	8	126		Root Control				
COL-PWS-2004204	8	125		Root Control				
COL-PWS-2004235	8	100		Root Control				
COL-PWS-2012085	6	650		Root Control				
COL-PWS-3000380	8	281		Root Control				
COL-PWS-3000563	8	318		Root Control				
COL-PWS-3003479	8	217		Root Control				
COL-PWS-4013707	8	150		Root Control				
COL-PWS-4014702	8	237		Root Control				
COL-PWS-4014845	8	113		Root Control				

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-4016381	8	123		Root Control				
COL-PWS-4016446	8	300		Root Control				
COL-PWS-4016471	8	175		Root Control				
COL-PWS-4016668	10	402		Root Control				
COL-PWS-5009078	8	314		Root Control				
COL-PWS-5009115	8	120		Root Control				
COL-PWS-5009141	8	319		Root Control				
COL-PWS-5009318	8	272		Root Control				
COL-PWS-6013242	8	287		Root Control				
COL-PWS-4001739	8	327		F.O.G. Control				
COL-PWS-4006682	8	385		F.O.G. Control				
COL-PWS-4009199	8	326		F.O.G. Control				
COL-PWS-4010286	8	270		F.O.G. Control				
COL-PWS-4016731	8	435		F.O.G. Control				
COL-PWS-5011582	8	248		F.O.G. Control				
COL-PWS-6000118	8	372		F.O.G. Control				
COL-PWS-2000614	8	338		Frequent Inspections				
COL-PWS-2001486	8	240		Frequent Inspections				
COL-PWS-4014179	8	302		Frequent Inspections				
COL-PWS-4017309	8	98		Frequent Inspections				
COL-PWS-7002178	42	395		High Frequency Cleaning				
COL-PWS-7002413	42	388		High Frequency Cleaning				
COL-PWS-1008614	18	361		High Frequency Cleaning				
COL-PWS-1008972	15	326		High Frequency Cleaning				
COL-PWS-2000638	18	300		High Frequency Cleaning				
COL-PWS-2003603	8	271		High Frequency Cleaning				
COL-PWS-2011245	24	521		High Frequency Cleaning				
COL-PWS-4011010	8	341		High Frequency Cleaning				
COL-PWS-4015639	8	200		High Frequency Cleaning				
COL-PWS-5012020	15	321		High Frequency Cleaning				
COL-PWS-5012540	12	262		High Frequency Cleaning				
COL-PWS-5014423	24	23		High Frequency Cleaning				
COL-PWS-5014429	24	280		High Frequency Cleaning				
COL-PWS-7001510	24	446		High Frequency Cleaning				
COL-PWS-1008131	36	212		High Frequency Cleaning				
COL-PWS-1008417	24	458		High Frequency Cleaning				
COL-PWS-1008445	15	387		High Frequency Cleaning				
COL-PWS-1009024	8	54		High Frequency Cleaning				
COL-PWS-1009026	8	242		High Frequency Cleaning				
COL-PWS-1018063	18	220		High Frequency Cleaning				
COL-PWS-2000073	42	372		High Frequency Cleaning				
COL-PWS-2001011	27	282		High Frequency Cleaning				
COL-PWS-2003703	12	332		High Frequency Cleaning				
COL-PWS-2004128	8	350		High Frequency Cleaning				
COL-PWS-2004514	8	25		High Frequency Cleaning				
COL-PWS-2011841	8	200		High Frequency Cleaning				
COL-PWS-2014594	10	155		High Frequency Cleaning				
COL-PWS-2017072	8	127		High Frequency Cleaning				
COL-PWS-2017224	8	277		High Frequency Cleaning				
COL-PWS-4002677	8	97		High Frequency Cleaning				
COL-PWS-4002895	8	358		High Frequency Cleaning				
COL-PWS-4005865	8	353		High Frequency Cleaning				
COL-PWS-4009348	10	52		High Frequency Cleaning				
COL-PWS-4009988	8	342		High Frequency Cleaning				
COL-PWS-4010163	8	110		High Frequency Cleaning				
COL-PWS-4010415	8	256		High Frequency Cleaning				
COL-PWS-4010713	8	172		High Frequency Cleaning				
COL-PWS-4012043	8	406		High Frequency Cleaning				
COL-PWS-4012499	8	319		High Frequency Cleaning				
COL-PWS-4012708	8	300		High Frequency Cleaning				
COL-PWS-4013621	8	118		High Frequency Cleaning				
COL-PWS-4016521	8	173		High Frequency Cleaning				
COL-PWS-4017273	8	167		High Frequency Cleaning				
COL-PWS-5014159	15	188		High Frequency Cleaning				
COL-PWS-5014225	15	313		High Frequency Cleaning				
COL-PWS-5014352	24	544		High Frequency Cleaning				
COL-PWS-5017454	8	115		High Frequency Cleaning				
COL-PWS-5021380	27	304		High Frequency Cleaning				
COL-PWS-6016239	8	470		High Frequency Cleaning				
COL-PWS-6017452	8	260		High Frequency Cleaning				
COL-PWS-7001271	8	119		High Frequency Cleaning				
COL-PWS-7001766	10	150		High Frequency Cleaning				

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-7003464	42	519		High Frequency Cleaning				
COL-PWS-1005707	27	39		High Frequency Cleaning				
COL-PWS-1005758	27	50		High Frequency Cleaning				
COL-PWS-1005808	27	426		High Frequency Cleaning				
COL-PWS-1007485	8	157		Root & F.O.G. Control				
COL-PWS-1004359	8	148		Root Control				
COL-PWS-1005718	6	430		Root Control				
COL-PWS-1007666	8	158		Root Control				
COL-PWS-2001318	18	172		Root Control				
COL-PWS-2001947	8	227		Root Control				
COL-PWS-2002274	8	250		Root Control				
COL-PWS-2002805	8	256		Root Control				
COL-PWS-2004329	8	220		Root Control				
COL-PWS-2016912	8	235		Root Control				
COL-PWS-2017449	8	176		Root Control				
COL-PWS-3001372	8	290		Root Control				
COL-PWS-3020283	8	91		Root Control				
COL-PWS-4016083	8	168		Root Control				
COL-PWS-4020439	8	38		Root Control				
COL-PWS-5015606	12	669		Root Control				
COL-PWS-5016717	8	350		Root Control				
COL-PWS-7003924	8	300		Root Control				
COL-PWS-1004405	8	373		Root Control				
COL-PWS-1007942	18	326		Root Control				
COL-PWS-1008200	6	250		Root Control				
COL-PWS-1008493	8	283		Root Control				
COL-PWS-1008820	8	350		Root Control				
COL-PWS-2000136	8	163		Root Control				
COL-PWS-2000289	8	350		Root Control				
COL-PWS-2000353	8	220		Root Control				
COL-PWS-2000628	8	325		Root Control				
COL-PWS-2000886	8	172		Root Control				
COL-PWS-2000936	18	379		Root Control				
COL-PWS-2001231	8	250		Root Control				
COL-PWS-2001361	8	230		Root Control				
COL-PWS-2001531	15	88		Root Control				
COL-PWS-2004206	8	285		Root Control				
COL-PWS-2004518	8	197		Root Control				
COL-PWS-2004671	8	319		Root Control				
COL-PWS-2014199	8	80		Root Control				
COL-PWS-2020199	8	5		Root Control				
COL-PWS-2020365	8	298		Root Control				
COL-PWS-3000155	8	136		Root Control				
COL-PWS-3000829	8	263		Root Control				
COL-PWS-3001103	8	219		Root Control				
COL-PWS-3002270	8	335		Root Control				
COL-PWS-3002285	8	280		Root Control				
COL-PWS-3002402	8	293		Root Control				
COL-PWS-3002476	8	255		Root Control				
COL-PWS-3003343	8	367		Root Control				
COL-PWS-3003442	8	208		Root Control				
COL-PWS-3003664	8	248		Root Control				
COL-PWS-3003688	8	210		Root Control				
COL-PWS-3003819	10	74		Root Control				
COL-PWS-4010890	8	355		Root Control				
COL-PWS-4011645	8	480		Root Control				
COL-PWS-4015184	8	244		Root Control				
COL-PWS-4015945	8	67		Root Control				
COL-PWS-4016558	8	168		Root Control				
COL-PWS-4016890	8	90		Root Control				
COL-PWS-4016944	8	210		Root Control				
COL-PWS-4016970	8	238		Root Control				
COL-PWS-4017122	8	175		Root Control				
COL-PWS-4017143	8	235		Root Control				
COL-PWS-4017183	8	326		Root Control				
COL-PWS-4017433	8	400		Root Control				
COL-PWS-4017581	8	350		Root Control				
COL-PWS-4017716	8	234		Root Control				
COL-PWS-4017842	8	248		Root Control				
COL-PWS-5009149	8	94		Root Control				
COL-PWS-5009245	8	292		Root Control				
COL-PWS-5014835	8	352		Root Control				

Asset ID	Diameter (in)	Length (ft)	Recommended Renewal Project	Recommended O&M	Quantity	Total Project Cost	Renewal Program Phase	Notes
COL-PWS-5020871	8	17		Root Control				
COL-PWS-6009980	8	346		Root Control				
COL-PWS-6016425	8	475		Root Control				
COL-PWS-6017080	21	165		Root Control				
COL-PWS-6017218	8	195		Root Control				
COL-PWS-7001537	8	260		Root Control				
COL-PWS-7002831	27	286		Root Control				
COL-PWS-7002847	27	72		Root Control				
COL-PWS-7011511	8	278		Root Control				
COL-PWS-7011648	8	128		Root Control				
COL-PWS-5015977	8	305		F.O.G. Control				
COL-PWS-1004645	8	161		F.O.G. Control				
COL-PWS-1007584	8	345		F.O.G. Control				
COL-PWS-1007630	10	241		F.O.G. Control				
COL-PWS-1007851	8	300		F.O.G. Control				
COL-PWS-1008617	10	347		F.O.G. Control				
COL-PWS-1008619	10	249		F.O.G. Control				
COL-PWS-1008716	8	239		F.O.G. Control				
COL-PWS-1017985	12	309		F.O.G. Control				
COL-PWS-2016237	8	405		F.O.G. Control				
COL-PWS-4001413	8	307		F.O.G. Control				
COL-PWS-4010250	12	298		F.O.G. Control				
COL-PWS-4011912	8	264		F.O.G. Control				
COL-PWS-4012970	8	151		F.O.G. Control				
COL-PWS-4013672	8	303		F.O.G. Control				
COL-PWS-4013674	8	303		F.O.G. Control				
COL-PWS-4013689	8	141		F.O.G. Control				
COL-PWS-5016092	8	310		F.O.G. Control				
COL-PWS-1008222	8	274		Clean & Inspect				
COL-PWS-6013688	8	320		F.O.G. Control				
COL-PWS-7008064	8	152		F.O.G. Control				
COL-PWS-5015761	8	159		Frequent Inspections				
COL-PWS-5015993	8	297		Frequent Inspections				
COL-PWS-5016213	8	280		Frequent Inspections				
COL-PWS-6017247	10	654		Frequent Inspections				
COL-PWS-1008288	12	0		Gain Access & Inspect				
COL-PWS-7001864	8	197		High Frequency Cleaning				
COL-PWS-1008190	8	147		Inspect				
COL-PWS-5016109	8	298		Root Control				
COL-PWS-7001940	8	305		Root Control				

Appendix 2E

MANHOLE RENEWAL PROJECT AND PHASE

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-6002428		Repair - Channel		1	$8,500	1	
COL-MWS-6000258		Repair - Channel		1	$0	1	Costs attributed to recommened pipeline repalcement cost
COL-MWS-3015006	8.68	Repair - Bench		1	$5,400	1	
COL-MWS-2009080	10.89	Line		10.89	$36,500	1	
COL-MWS-1000651		Line		8	$26,800	1	
COL-MWS-1011581		Line		8	$26,800	1	
COL-MWS-2013570	8.2	Line		8.2	$27,500	1	
COL-MWS-2005225		Coat - Channel	High Frequency Cleaning	1	$9,900	1	
COL-MWS-1006016		Coat - Channel		1	$9,900	1	
COL-MWS-1014026	11.56	Coat - Channel		1	$9,900	1	
COL-MWS-4004526	9.64	Coat - Bench & Channel		1	$9,900	1	
COL-MWS-4007997		Repair - Chimney		1	$11,200	1	
COL-MWS-4014704		Line	Root Control	8	$27,000	1	
COL-MWS-2008686	26.26	Line		26.26	$90,000	1	
COL-MWS-4004016		Line		8	$27,000	1	
COL-MWS-4013212		Line		8	$27,000	1	
COL-MWS-3015805		Repair - Chimney		1	$11,200	2	
COL-MWS-1001905		Repair - Channel		1	$8,500	2	
COL-MWS-3002083	5.6	Repair - Channel		1	$8,500	2	
COL-MWS-3002084	5.66	Repair - Channel		1	$8,500	2	
COL-MWS-3015735	5.74	Repair - Channel		1	$8,500	2	
COL-MWS-4013559	6.9	Repair - Channel		1	$8,500	2	
COL-MWS-5011648		Repair - Channel		1	$8,500	2	
COL-MWS-4003894	8.16	Repair - Bench & Channel		1	$9,400	2	
COL-MWS-1005901		Repair - Bench		1	$5,400	2	
COL-MWS-1011599		Repair - Bench		1	$5,400	2	
COL-MWS-1011752		Repair - Bench		1	$5,400	2	
COL-MWS-2010028		Repair - Bench		1	$5,400	2	
COL-MWS-2012362		Repair - Bench		1	$5,400	2	
COL-MWS-5005508		Repair - Bench		1	$5,400	2	
COL-MWS-7011182		Repair - Bench		1	$5,400	2	
COL-MWS-1006015		Repair - Bench		1	$0	2	Costs attributed to recommened pipeline repalcement cost
COL-MWS-4004027		Line		8	$26,800	2	0
COL-MWS-2008683	18.82	Line		18.82	$63,000	2	0
COL-MWS-3014670	16.7	Line		16.7	$55,900	2	0
COL-MWS-2013567	9.87	Line		9.87	$33,100	2	0
COL-MWS-2012239		Line		8	$26,800	2	0
COL-MWS-2015259		Line		8	$26,800	2	0
COL-MWS-4008012		Line		8	$26,800	2	0
COL-MWS-5003529		Line		8	$26,800	2	0
COL-MWS-5003530		Line		8	$26,800	2	0
COL-MWS-5013687		Line		8	$26,800	2	0
COL-MWS-2013566	7.77	Line		7.77	26100	2	0
COL-MWS-2013564	7.67	Line		7.67	25700	2	0
COL-MWS-4013560	6.5	Line		6.5	21800	2	0
COL-MWS-4004580	7.82	Line		7.82	26200	2	0
COL-MWS-4005665		Line		8	27000	2	0
COL-MWS-4008868		Line		8	27000	2	0
COL-MWS-1000032			Gain Access & Inspect				
COL-MWS-1000088			Gain Access & Inspect				
COL-MWS-1000089			Gain Access & Inspect				
COL-MWS-1000182			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-1000183			Gain Access & Inspect				
COL-MWS-1000186			Gain Access & Inspect				
COL-MWS-1000606			Gain Access & Inspect				
COL-MWS-1000608			Gain Access & Inspect				
COL-MWS-1000609			Gain Access & Inspect				
COL-MWS-1000633			Gain Access & Inspect				
COL-MWS-1000646			Gain Access & Inspect				
COL-MWS-1000649			Gain Access & Inspect				
COL-MWS-1000651		Line	0	8	$26,800	1	
COL-MWS-1000669			Gain Access & Inspect				
COL-MWS-1000670			Gain Access & Inspect				
COL-MWS-1000679			Gain Access & Inspect				
COL-MWS-1000740			Gain Access & Inspect				
COL-MWS-1000791			Gain Access & Inspect				
COL-MWS-1000792			Gain Access & Inspect				
COL-MWS-1000793			Gain Access & Inspect				
COL-MWS-1000796			Gain Access & Inspect				
COL-MWS-1000797			Gain Access & Inspect				
COL-MWS-1000798			Gain Access & Inspect				
COL-MWS-1000799			Gain Access & Inspect				
COL-MWS-1000820			Gain Access & Inspect				
COL-MWS-1000821			Gain Access & Inspect				
COL-MWS-1000822			Gain Access & Inspect				
COL-MWS-1000836			Gain Access & Inspect				
COL-MWS-1000960			Gain Access & Inspect				
COL-MWS-1000962			Gain Access & Inspect				
COL-MWS-1000963			Gain Access & Inspect				
COL-MWS-1001201			Gain Access & Inspect				
COL-MWS-1001202			Gain Access & Inspect				
COL-MWS-1001806			Gain Access & Inspect				
COL-MWS-1001807			Gain Access & Inspect				
COL-MWS-1001808			Gain Access & Inspect				
COL-MWS-1001886			Gain Access & Inspect				
COL-MWS-1001887			Gain Access & Inspect				
COL-MWS-1001888			Gain Access & Inspect				
COL-MWS-1001893			Gain Access & Inspect				
COL-MWS-1001895			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-1001896			Gain Access & Inspect				
COL-MWS-1001899			Gain Access & Inspect				
COL-MWS-1001904			Gain Access & Inspect				
COL-MWS-1001908			Gain Access & Inspect				
COL-MWS-1001910			Gain Access & Inspect				
COL-MWS-1001911			Gain Access & Inspect				
COL-MWS-1002043			Gain Access & Inspect				
COL-MWS-1002044			Gain Access & Inspect				
COL-MWS-1005144			Gain Access & Inspect				
COL-MWS-1005715			Gain Access & Inspect				
COL-MWS-1005716			Gain Access & Inspect				
COL-MWS-1005874			Gain Access & Inspect				
COL-MWS-1005898			Gain Access & Inspect				
COL-MWS-1005899			Gain Access & Inspect				
COL-MWS-1005977			Gain Access & Inspect				
COL-MWS-1005996			Gain Access & Inspect				
COL-MWS-1006020			Gain Access & Inspect				
COL-MWS-1006021			Gain Access & Inspect				
COL-MWS-1006022			Gain Access & Inspect				
COL-MWS-1006027			Gain Access & Inspect				
COL-MWS-1006040			Gain Access & Inspect				
COL-MWS-1006041			Gain Access & Inspect				
COL-MWS-1006057			Gain Access & Inspect				
COL-MWS-1006058			Gain Access & Inspect				
COL-MWS-1006095			Gain Access & Inspect				
COL-MWS-1006106			Gain Access & Inspect				
COL-MWS-1006142			Gain Access & Inspect				
COL-MWS-1006342			Gain Access & Inspect				
COL-MWS-1006461			Gain Access & Inspect				
COL-MWS-1006462			Gain Access & Inspect				
COL-MWS-1006471			Gain Access & Inspect				
COL-MWS-1006474			Gain Access & Inspect				
COL-MWS-1006476			Gain Access & Inspect				
COL-MWS-1006477			Gain Access & Inspect				
COL-MWS-1006478			Gain Access & Inspect				
COL-MWS-1006479			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-1006480			Gain Access & Inspect				
COL-MWS-1006481			Gain Access & Inspect				
COL-MWS-1006482			Gain Access & Inspect				
COL-MWS-1006483			Gain Access & Inspect				
COL-MWS-1006484			Gain Access & Inspect				
COL-MWS-1006485			Gain Access & Inspect				
COL-MWS-1006486			Gain Access & Inspect				
COL-MWS-1006487			Gain Access & Inspect				
COL-MWS-1006488			Gain Access & Inspect				
COL-MWS-1006489			Gain Access & Inspect				
COL-MWS-1006491			Gain Access & Inspect				
COL-MWS-1006492			Gain Access & Inspect				
COL-MWS-1006493			Gain Access & Inspect				
COL-MWS-1006494			Gain Access & Inspect				
COL-MWS-1006603			Gain Access & Inspect				
COL-MWS-1006605			Gain Access & Inspect				
COL-MWS-1006606			Gain Access & Inspect				
COL-MWS-1006607			Gain Access & Inspect				
COL-MWS-1006608			Gain Access & Inspect				
COL-MWS-1006618			Gain Access & Inspect				
COL-MWS-1009587			Gain Access & Inspect				
COL-MWS-1011756			Gain Access & Inspect				
COL-MWS-1011808			Gain Access & Inspect				
COL-MWS-1012093			Gain Access & Inspect				
COL-MWS-1012094			Gain Access & Inspect				
COL-MWS-1012096			Gain Access & Inspect				
COL-MWS-1012117			Gain Access & Inspect				
COL-MWS-1012134			Gain Access & Inspect				
COL-MWS-1012136			Gain Access & Inspect				
COL-MWS-1012564			Gain Access & Inspect				
COL-MWS-1012569			Gain Access & Inspect				
COL-MWS-1012574			Gain Access & Inspect				
COL-MWS-1012594			Gain Access & Inspect				
COL-MWS-1012595			Gain Access & Inspect				
COL-MWS-1013961			Gain Access & Inspect				
COL-MWS-10114007			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-1014008			Gain Access & Inspect				
COL-MWS-1014013			Gain Access & Inspect				
COL-MWS-1014014			Gain Access & Inspect				
COL-MWS-1014015			Gain Access & Inspect				
COL-MWS-1014016			Gain Access & Inspect				
COL-MWS-1014021			Gain Access & Inspect				
COL-MWS-1014023			Gain Access & Inspect				
COL-MWS-1014059			Gain Access & Inspect				
COL-MWS-1014064			Gain Access & Inspect				
COL-MWS-1014069			Gain Access & Inspect				
COL-MWS-1014158			Gain Access & Inspect				
COL-MWS-1014160			Gain Access & Inspect				
COL-MWS-1014279			Gain Access & Inspect				
COL-MWS-1014282			Gain Access & Inspect				
COL-MWS-1014284			Gain Access & Inspect				
COL-MWS-1014285			Gain Access & Inspect				
COL-MWS-1014287			Gain Access & Inspect				
COL-MWS-1014300			Gain Access & Inspect				
COL-MWS-1014301			Gain Access & Inspect				
COL-MWS-1014302			Gain Access & Inspect				
COL-MWS-1014304			Gain Access & Inspect				
COL-MWS-1014329			Gain Access & Inspect				
COL-MWS-1014336			Gain Access & Inspect				
COL-MWS-1014337			Gain Access & Inspect				
COL-MWS-1014338			Gain Access & Inspect				
COL-MWS-1014339			Gain Access & Inspect				
COL-MWS-1014341			Gain Access & Inspect				
COL-MWS-1014342			Gain Access & Inspect				
COL-MWS-1014343			Gain Access & Inspect				
COL-MWS-1014344			Gain Access & Inspect				
COL-MWS-1014350			Gain Access & Inspect				
COL-MWS-1014807			Gain Access & Inspect				
COL-MWS-1014822			Gain Access & Inspect				
COL-MWS-1014823			Gain Access & Inspect				
COL-MWS-1015545			Gain Access & Inspect				
COL-MWS-1015546			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-1015547			Gain Access & Inspect				
COL-MWS-1015548			Gain Access & Inspect				
COL-MWS-1015549			Gain Access & Inspect				
COL-MWS-1015550			Gain Access & Inspect				
COL-MWS-1015551			Gain Access & Inspect				
COL-MWS-1015552			Gain Access & Inspect				
COL-MWS-1015553			Gain Access & Inspect				
COL-MWS-1015554			Gain Access & Inspect				
COL-MWS-1015555			Gain Access & Inspect				
COL-MWS-1015573			Gain Access & Inspect				
COL-MWS-1015838			Gain Access & Inspect				
COL-MWS-1015839			Gain Access & Inspect				
COL-MWS-1015840			Gain Access & Inspect				
COL-MWS-1015841			Gain Access & Inspect				
COL-MWS-1015842			Gain Access & Inspect				
COL-MWS-1015844			Gain Access & Inspect				
COL-MWS-1015847			Gain Access & Inspect				
COL-MWS-1015849			Gain Access & Inspect				
COL-MWS-1015850			Gain Access & Inspect				
COL-MWS-1020023			Gain Access & Inspect				
COL-MWS-1020024			Gain Access & Inspect				
COL-MWS-1020029			Gain Access & Inspect				
COL-MWS-1020030			Gain Access & Inspect				
COL-MWS-2000120			Gain Access & Inspect				
COL-MWS-2000122			Gain Access & Inspect				
COL-MWS-2000333			Gain Access & Inspect				
COL-MWS-2000334			Gain Access & Inspect				
COL-MWS-2001366			Gain Access & Inspect				
COL-MWS-2002041			Gain Access & Inspect				
COL-MWS-2002121			Gain Access & Inspect				
COL-MWS-2002128			Gain Access & Inspect				
COL-MWS-2002129			Gain Access & Inspect				
COL-MWS-2002130			Gain Access & Inspect				
COL-MWS-2002131			Gain Access & Inspect				
COL-MWS-2002132			Gain Access & Inspect				
COL-MWS-2002255			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-2003003			Gain Access & Inspect				
COL-MWS-2003004			Gain Access & Inspect				
COL-MWS-2003005			Gain Access & Inspect				
COL-MWS-2003006			Gain Access & Inspect				
COL-MWS-2003007			Gain Access & Inspect				
COL-MWS-2003015			Gain Access & Inspect				
COL-MWS-2003016			Gain Access & Inspect				
COL-MWS-2003017			Gain Access & Inspect				
COL-MWS-2003057			Gain Access & Inspect				
COL-MWS-2003063			Gain Access & Inspect				
COL-MWS-2003064			Gain Access & Inspect				
COL-MWS-2003065			Gain Access & Inspect				
COL-MWS-2003066			Gain Access & Inspect				
COL-MWS-2003071			Gain Access & Inspect				
COL-MWS-2003072			Gain Access & Inspect				
COL-MWS-2003073			Gain Access & Inspect				
COL-MWS-2003074			Gain Access & Inspect				
COL-MWS-2006202			Gain Access & Inspect				
COL-MWS-2006296			Gain Access & Inspect				
COL-MWS-2006690			Gain Access & Inspect				
COL-MWS-2006691			Gain Access & Inspect				
COL-MWS-2006692			Gain Access & Inspect				
COL-MWS-2006707			Gain Access & Inspect				
COL-MWS-2006708			Gain Access & Inspect				
COL-MWS-2006709			Gain Access & Inspect				
COL-MWS-2006710			Gain Access & Inspect				
COL-MWS-2006711			Gain Access & Inspect				
COL-MWS-2006747			Gain Access & Inspect				
COL-MWS-2006753			Gain Access & Inspect				
COL-MWS-2006755			Gain Access & Inspect				
COL-MWS-2006756			Gain Access & Inspect				
COL-MWS-2006766			Gain Access & Inspect				
COL-MWS-2007349			Gain Access & Inspect				
COL-MWS-2007371			Gain Access & Inspect				
COL-MWS-2007379			Gain Access & Inspect				
COL-MWS-2008628			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-2008631			Gain Access & Inspect				
COL-MWS-2008632			Gain Access & Inspect				
COL-MWS-2008633			Gain Access & Inspect				
COL-MWS-2008635			Gain Access & Inspect				
COL-MWS-2008636			Gain Access & Inspect				
COL-MWS-2008668			Gain Access & Inspect				
COL-MWS-2008674			Gain Access & Inspect				
COL-MWS-2008684			Gain Access & Inspect				
COL-MWS-2008685			Gain Access & Inspect				
COL-MWS-2008693			Gain Access & Inspect				
COL-MWS-2008743			Gain Access & Inspect				
COL-MWS-2008744			Gain Access & Inspect				
COL-MWS-2008764			Gain Access & Inspect				
COL-MWS-2009106			Gain Access & Inspect				
COL-MWS-2009107			Gain Access & Inspect				
COL-MWS-2009108			Gain Access & Inspect				
COL-MWS-2009109			Gain Access & Inspect				
COL-MWS-2009110			Gain Access & Inspect				
COL-MWS-2009111			Gain Access & Inspect				
COL-MWS-2009112			Gain Access & Inspect				
COL-MWS-2009113			Gain Access & Inspect				
COL-MWS-2009114			Gain Access & Inspect				
COL-MWS-2009135			Gain Access & Inspect				
COL-MWS-2009157			Gain Access & Inspect				
COL-MWS-2010013			Gain Access & Inspect				
COL-MWS-2010030			Gain Access & Inspect				
COL-MWS-2010031			Gain Access & Inspect				
COL-MWS-2010032			Gain Access & Inspect				
COL-MWS-2010047			Gain Access & Inspect				
COL-MWS-2010048			Gain Access & Inspect				
COL-MWS-2010057			Gain Access & Inspect				
COL-MWS-2010058			Gain Access & Inspect				
COL-MWS-2010059			Gain Access & Inspect				
COL-MWS-2010061			Gain Access & Inspect				
COL-MWS-2010062			Gain Access & Inspect				
COL-MWS-2010063			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-2010064			Gain Access & Inspect				
COL-MWS-2010065			Gain Access & Inspect				
COL-MWS-2010066			Gain Access & Inspect				
COL-MWS-2010067			Gain Access & Inspect				
COL-MWS-2010068			Gain Access & Inspect				
COL-MWS-2010069			Gain Access & Inspect				
COL-MWS-2010070			Gain Access & Inspect				
COL-MWS-2010071			Gain Access & Inspect				
COL-MWS-2010072			Gain Access & Inspect				
COL-MWS-2010073			Gain Access & Inspect				
COL-MWS-2010074			Gain Access & Inspect				
COL-MWS-2010075			Gain Access & Inspect				
COL-MWS-2010076			Gain Access & Inspect				
COL-MWS-2010077			Gain Access & Inspect				
COL-MWS-2010078			Gain Access & Inspect				
COL-MWS-2010079			Gain Access & Inspect				
COL-MWS-2010093			Gain Access & Inspect				
COL-MWS-2010099			Gain Access & Inspect				
COL-MWS-2010128			Gain Access & Inspect				
COL-MWS-2010137			Gain Access & Inspect				
COL-MWS-2010142			Gain Access & Inspect				
COL-MWS-2010143			Gain Access & Inspect				
COL-MWS-2010155			Gain Access & Inspect				
COL-MWS-2010156			Gain Access & Inspect				
COL-MWS-2010157			Gain Access & Inspect				
COL-MWS-2010159			Gain Access & Inspect				
COL-MWS-2010160			Gain Access & Inspect				
COL-MWS-2011616			Gain Access & Inspect				
COL-MWS-2011617			Gain Access & Inspect				
COL-MWS-2011806			Gain Access & Inspect				
COL-MWS-2011807			Gain Access & Inspect				
COL-MWS-2012147			Gain Access & Inspect				
COL-MWS-2012238			Gain Access & Inspect				
COL-MWS-2012240			Gain Access & Inspect				
COL-MWS-2012243			Gain Access & Inspect				
COL-MWS-2012334			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-2012360			Gain Access & Inspect				
COL-MWS-2012373			Gain Access & Inspect				
COL-MWS-2012827			Gain Access & Inspect				
COL-MWS-2012832			Gain Access & Inspect				
COL-MWS-2012833			Gain Access & Inspect				
COL-MWS-2012834			Gain Access & Inspect				
COL-MWS-2012835			Gain Access & Inspect				
COL-MWS-2012836			Gain Access & Inspect				
COL-MWS-2012837			Gain Access & Inspect				
COL-MWS-2012838			Gain Access & Inspect				
COL-MWS-2012839			Gain Access & Inspect				
COL-MWS-2012842			Gain Access & Inspect				
COL-MWS-2012844			Gain Access & Inspect				
COL-MWS-2012845			Gain Access & Inspect				
COL-MWS-2013572			Gain Access & Inspect				
COL-MWS-2013573			Gain Access & Inspect				
COL-MWS-2013574			Gain Access & Inspect				
COL-MWS-2013575			Gain Access & Inspect				
COL-MWS-2013576			Gain Access & Inspect				
COL-MWS-2014206			Gain Access & Inspect				
COL-MWS-2014493			Gain Access & Inspect				
COL-MWS-2014494			Gain Access & Inspect				
COL-MWS-2014495			Gain Access & Inspect				
COL-MWS-2014496			Gain Access & Inspect				
COL-MWS-2014544			Gain Access & Inspect				
COL-MWS-2014545			Gain Access & Inspect				
COL-MWS-2014546			Gain Access & Inspect				
COL-MWS-2014547			Gain Access & Inspect				
COL-MWS-2014548			Gain Access & Inspect				
COL-MWS-2014549			Gain Access & Inspect				
COL-MWS-2014550			Gain Access & Inspect				
COL-MWS-2014551			Gain Access & Inspect				
COL-MWS-2014552			Gain Access & Inspect				
COL-MWS-2014554			Gain Access & Inspect				
COL-MWS-2014555			Gain Access & Inspect				
COL-MWS-2014556			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-2014557			Gain Access & Inspect				
COL-MWS-2014558			Gain Access & Inspect				
COL-MWS-2014571			Gain Access & Inspect				
COL-MWS-2014579			Gain Access & Inspect				
COL-MWS-2014595			Gain Access & Inspect				
COL-MWS-2014610			Gain Access & Inspect				
COL-MWS-2014614			Gain Access & Inspect				
COL-MWS-2014615			Gain Access & Inspect				
COL-MWS-2014616			Gain Access & Inspect				
COL-MWS-2014620			Gain Access & Inspect				
COL-MWS-2014944			Gain Access & Inspect				
COL-MWS-2014952			Gain Access & Inspect				
COL-MWS-2014958			Gain Access & Inspect				
COL-MWS-2015037			Gain Access & Inspect				
COL-MWS-2015038			Gain Access & Inspect				
COL-MWS-2015039			Gain Access & Inspect				
COL-MWS-2015046			Gain Access & Inspect				
COL-MWS-2015052			Gain Access & Inspect				
COL-MWS-2015053			Gain Access & Inspect				
COL-MWS-2015054			Gain Access & Inspect				
COL-MWS-2015058			Gain Access & Inspect				
COL-MWS-2015060			Gain Access & Inspect				
COL-MWS-2015061			Gain Access & Inspect				
COL-MWS-2015062			Gain Access & Inspect				
COL-MWS-2015063			Gain Access & Inspect				
COL-MWS-2015064			Gain Access & Inspect				
COL-MWS-2015065			Gain Access & Inspect				
COL-MWS-2015066			Gain Access & Inspect				
COL-MWS-2015067			Gain Access & Inspect				
COL-MWS-2015068			Gain Access & Inspect				
COL-MWS-2015069			Gain Access & Inspect				
COL-MWS-2015070			Gain Access & Inspect				
COL-MWS-2015071			Gain Access & Inspect				
COL-MWS-2015072			Gain Access & Inspect				
COL-MWS-2015252			Gain Access & Inspect				
COL-MWS-2015258			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-2020049			Gain Access & Inspect				
COL-MWS-2020050			Gain Access & Inspect				
COL-MWS-2020051			Gain Access & Inspect				
COL-MWS-2020052			Gain Access & Inspect				
COL-MWS-3001699			Gain Access & Inspect				
COL-MWS-3001706			Gain Access & Inspect				
COL-MWS-3001707			Gain Access & Inspect				
COL-MWS-3001708			Gain Access & Inspect				
COL-MWS-3001709			Gain Access & Inspect				
COL-MWS-3001710			Gain Access & Inspect				
COL-MWS-3001711			Gain Access & Inspect				
COL-MWS-3001712			Gain Access & Inspect				
COL-MWS-3001713			Gain Access & Inspect				
COL-MWS-3001714			Gain Access & Inspect				
COL-MWS-3001715			Gain Access & Inspect				
COL-MWS-3001716			Gain Access & Inspect				
COL-MWS-3001717			Gain Access & Inspect				
COL-MWS-3001718			Gain Access & Inspect				
COL-MWS-3001719			Gain Access & Inspect				
COL-MWS-3001786			Gain Access & Inspect				
COL-MWS-3001809			Gain Access & Inspect				
COL-MWS-3001810			Gain Access & Inspect				
COL-MWS-3002042			Gain Access & Inspect				
COL-MWS-3002125			Gain Access & Inspect				
COL-MWS-3002126			Gain Access & Inspect				
COL-MWS-3002127			Gain Access & Inspect				
COL-MWS-3006334			Gain Access & Inspect				
COL-MWS-3006335			Gain Access & Inspect				
COL-MWS-3006336			Gain Access & Inspect				
COL-MWS-3006337			Gain Access & Inspect				
COL-MWS-3006338			Gain Access & Inspect				
COL-MWS-3006339			Gain Access & Inspect				
COL-MWS-3006340			Gain Access & Inspect				
COL-MWS-3006341			Gain Access & Inspect				
COL-MWS-3006343			Gain Access & Inspect				
COL-MWS-3006344			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-3006688			Gain Access & Inspect				
COL-MWS-3006689			Gain Access & Inspect				
COL-MWS-3006693			Gain Access & Inspect				
COL-MWS-3006694			Gain Access & Inspect				
COL-MWS-3006695			Gain Access & Inspect				
COL-MWS-3006700			Gain Access & Inspect				
COL-MWS-3006701			Gain Access & Inspect				
COL-MWS-3006702			Gain Access & Inspect				
COL-MWS-3006703			Gain Access & Inspect				
COL-MWS-3006704			Gain Access & Inspect				
COL-MWS-3006705			Gain Access & Inspect				
COL-MWS-3006706			Gain Access & Inspect				
COL-MWS-3006712			Gain Access & Inspect				
COL-MWS-3006716			Gain Access & Inspect				
COL-MWS-3006717			Gain Access & Inspect				
COL-MWS-3006718			Gain Access & Inspect				
COL-MWS-3006719			Gain Access & Inspect				
COL-MWS-3006720			Gain Access & Inspect				
COL-MWS-3006721			Gain Access & Inspect				
COL-MWS-3006723			Gain Access & Inspect				
COL-MWS-3012156			Gain Access & Inspect				
COL-MWS-3013688			Gain Access & Inspect				
COL-MWS-3014626			Gain Access & Inspect				
COL-MWS-3014629			Gain Access & Inspect				
COL-MWS-3014630			Gain Access & Inspect				
COL-MWS-3014653			Gain Access & Inspect				
COL-MWS-3014654			Gain Access & Inspect				
COL-MWS-3014655			Gain Access & Inspect				
COL-MWS-3014657			Gain Access & Inspect				
COL-MWS-3014673			Gain Access & Inspect				
COL-MWS-3014681			Gain Access & Inspect				
COL-MWS-3014690			Gain Access & Inspect				
COL-MWS-3014691			Gain Access & Inspect				
COL-MWS-3014942			Gain Access & Inspect				
COL-MWS-3014943			Gain Access & Inspect				
COL-MWS-3014957			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-3015752			Gain Access & Inspect				
COL-MWS-3015809			Gain Access & Inspect				
COL-MWS-3015810			Gain Access & Inspect				
COL-MWS-3015811			Gain Access & Inspect				
COL-MWS-3015812			Gain Access & Inspect				
COL-MWS-3015813			Gain Access & Inspect				
COL-MWS-3015814			Gain Access & Inspect				
COL-MWS-3015877			Gain Access & Inspect				
COL-MWS-3015878			Gain Access & Inspect				
COL-MWS-4000422			Gain Access & Inspect				
COL-MWS-4000506			Gain Access & Inspect				
COL-MWS-4002802			Gain Access & Inspect				
COL-MWS-4002803			Gain Access & Inspect				
COL-MWS-4002806			Gain Access & Inspect				
COL-MWS-4002807			Gain Access & Inspect				
COL-MWS-4002814			Gain Access & Inspect				
COL-MWS-4002832			Gain Access & Inspect				
COL-MWS-4003841			Gain Access & Inspect				
COL-MWS-4003876			Gain Access & Inspect				
COL-MWS-4003903			Gain Access & Inspect				
COL-MWS-4004075			Gain Access & Inspect				
COL-MWS-4004076			Gain Access & Inspect				
COL-MWS-4004521			Gain Access & Inspect				
COL-MWS-4004524			Gain Access & Inspect				
COL-MWS-4004532			Gain Access & Inspect				
COL-MWS-4004534			Gain Access & Inspect				
COL-MWS-4004543			Gain Access & Inspect				
COL-MWS-4004948			Gain Access & Inspect				
COL-MWS-4004949			Gain Access & Inspect				
COL-MWS-4004961			Gain Access & Inspect				
COL-MWS-4004962			Gain Access & Inspect				
COL-MWS-4004969			Gain Access & Inspect				
COL-MWS-4004970			Gain Access & Inspect				
COL-MWS-4004984			Gain Access & Inspect				
COL-MWS-4005079			Gain Access & Inspect				
COL-MWS-4005081			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-4005082			Gain Access & Inspect				
COL-MWS-4005083			Gain Access & Inspect				
COL-MWS-4005329			Gain Access & Inspect				
COL-MWS-4005330			Gain Access & Inspect				
COL-MWS-4005331			Gain Access & Inspect				
COL-MWS-4005387			Gain Access & Inspect				
COL-MWS-4007182			Gain Access & Inspect				
COL-MWS-4007183			Gain Access & Inspect				
COL-MWS-4007186			Gain Access & Inspect				
COL-MWS-4007234			Gain Access & Inspect				
COL-MWS-4007309			Gain Access & Inspect				
COL-MWS-4007829			Gain Access & Inspect				
COL-MWS-4007844			Gain Access & Inspect				
COL-MWS-4007864			Gain Access & Inspect				
COL-MWS-4007865			Gain Access & Inspect				
COL-MWS-4007877			Gain Access & Inspect				
COL-MWS-4007878			Gain Access & Inspect				
COL-MWS-4007882			Gain Access & Inspect				
COL-MWS-4008018			Gain Access & Inspect				
COL-MWS-4008067			Gain Access & Inspect				
COL-MWS-4008091			Gain Access & Inspect				
COL-MWS-4008103			Gain Access & Inspect				
COL-MWS-4008110			Gain Access & Inspect				
COL-MWS-4008117			Gain Access & Inspect				
COL-MWS-4008120			Gain Access & Inspect				
COL-MWS-4008122			Gain Access & Inspect				
COL-MWS-4008131			Gain Access & Inspect				
COL-MWS-4008319			Gain Access & Inspect				
COL-MWS-4008320			Gain Access & Inspect				
COL-MWS-4008321			Gain Access & Inspect				
COL-MWS-4008325			Gain Access & Inspect				
COL-MWS-4008576			Gain Access & Inspect				
COL-MWS-4008609			Gain Access & Inspect				
COL-MWS-4008610			Gain Access & Inspect				
COL-MWS-4008624			Gain Access & Inspect				
COL-MWS-4008625			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-4008626			Gain Access & Inspect				
COL-MWS-4008721			Gain Access & Inspect				
COL-MWS-4008723			Gain Access & Inspect				
COL-MWS-4008763			Gain Access & Inspect				
COL-MWS-4008793			Gain Access & Inspect				
COL-MWS-4008801			Gain Access & Inspect				
COL-MWS-4008842			Gain Access & Inspect				
COL-MWS-4008849			Gain Access & Inspect				
COL-MWS-4008850			Gain Access & Inspect				
COL-MWS-4008851			Gain Access & Inspect				
COL-MWS-4008852			Gain Access & Inspect				
COL-MWS-4008853			Gain Access & Inspect				
COL-MWS-4008854			Gain Access & Inspect				
COL-MWS-4008855			Gain Access & Inspect				
COL-MWS-4008856			Gain Access & Inspect				
COL-MWS-4008858			Gain Access & Inspect				
COL-MWS-4008859			Gain Access & Inspect				
COL-MWS-4008884			Gain Access & Inspect				
COL-MWS-4009025			Gain Access & Inspect				
COL-MWS-4009026			Gain Access & Inspect				
COL-MWS-4009034			Gain Access & Inspect				
COL-MWS-4009042			Gain Access & Inspect				
COL-MWS-4009043			Gain Access & Inspect				
COL-MWS-4009044			Gain Access & Inspect				
COL-MWS-4009045			Gain Access & Inspect				
COL-MWS-4009047			Gain Access & Inspect				
COL-MWS-4009048			Gain Access & Inspect				
COL-MWS-4009183			Gain Access & Inspect				
COL-MWS-4010727			Gain Access & Inspect				
COL-MWS-4010728			Gain Access & Inspect				
COL-MWS-4010731			Gain Access & Inspect				
COL-MWS-4010755			Gain Access & Inspect				
COL-MWS-4010756			Gain Access & Inspect				
COL-MWS-4010757			Gain Access & Inspect				
COL-MWS-4012215			Gain Access & Inspect				
COL-MWS-4012330			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-4012415			Gain Access & Inspect				
COL-MWS-4012425			Gain Access & Inspect				
COL-MWS-4013051			Gain Access & Inspect				
COL-MWS-4013052			Gain Access & Inspect				
COL-MWS-4013070			Gain Access & Inspect				
COL-MWS-4013106			Gain Access & Inspect				
COL-MWS-4013179			Gain Access & Inspect				
COL-MWS-4013234			Gain Access & Inspect				
COL-MWS-4013266			Gain Access & Inspect				
COL-MWS-4013577			Gain Access & Inspect				
COL-MWS-4013595			Gain Access & Inspect				
COL-MWS-4013596			Gain Access & Inspect				
COL-MWS-4013598			Gain Access & Inspect				
COL-MWS-4013599			Gain Access & Inspect				
COL-MWS-4014241			Gain Access & Inspect				
COL-MWS-4014705			Gain Access & Inspect				
COL-MWS-4015110			Gain Access & Inspect				
COL-MWS-4015111			Gain Access & Inspect				
COL-MWS-4015269			Gain Access & Inspect				
COL-MWS-4015278			Gain Access & Inspect				
COL-MWS-4015292			Gain Access & Inspect				
COL-MWS-4020070			Gain Access & Inspect				
COL-MWS-4020071			Gain Access & Inspect				
COL-MWS-5000460			Gain Access & Inspect				
COL-MWS-5004308			Gain Access & Inspect				
COL-MWS-5004318			Gain Access & Inspect				
COL-MWS-5004319			Gain Access & Inspect				
COL-MWS-4004323			Gain Access & Inspect				
COL-MWS-5004342			Gain Access & Inspect				
COL-MWS-5004417			Gain Access & Inspect				
COL-MWS-5004418			Gain Access & Inspect				
COL-MWS-5004435			Gain Access & Inspect				
COL-MWS-5004450			Gain Access & Inspect				
COL-MWS-5005446			Gain Access & Inspect				
COL-MWS-5005526			Gain Access & Inspect				
COL-MWS-5005527			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-5005528			Gain Access & Inspect				
COL-MWS-5005572			Gain Access & Inspect				
COL-MWS-5007662			Gain Access & Inspect				
COL-MWS-5007718			Gain Access & Inspect				
COL-MWS-5008536			Gain Access & Inspect				
COL-MWS-5010468			Gain Access & Inspect				
COL-MWS-5010547			Gain Access & Inspect				
COL-MWS-5011027			Gain Access & Inspect				
COL-MWS-5011043			Gain Access & Inspect				
COL-MWS-5011055			Gain Access & Inspect				
COL-MWS-5011056			Gain Access & Inspect				
COL-MWS-5011057			Gain Access & Inspect				
COL-MWS-5011285			Gain Access & Inspect				
COL-MWS-5011399			Gain Access & Inspect				
COL-MWS-5011651			Gain Access & Inspect				
COL-MWS-5012918			Gain Access & Inspect				
COL-MWS-5013423			Gain Access & Inspect				
COL-MWS-5013426			Gain Access & Inspect				
COL-MWS-5013427			Gain Access & Inspect				
COL-MWS-5013511			Gain Access & Inspect				
COL-MWS-5013514			Gain Access & Inspect				
COL-MWS-5014129			Gain Access & Inspect				
COL-MWS-5014209			Gain Access & Inspect				
COL-MWS-5014706			Gain Access & Inspect				
COL-MWS-5014711			Gain Access & Inspect				
COL-MWS-5014712			Gain Access & Inspect				
COL-MWS-5014714			Gain Access & Inspect				
COL-MWS-5014716			Gain Access & Inspect				
COL-MWS-5015073			Gain Access & Inspect				
COL-MWS-5015078			Gain Access & Inspect				
COL-MWS-5015079			Gain Access & Inspect				
COL-MWS-5015084			Gain Access & Inspect				
COL-MWS-5015085			Gain Access & Inspect				
COL-MWS-5015359			Gain Access & Inspect				
COL-MWS-5015826			Gain Access & Inspect				
COL-MWS-5020063			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-6000522			Gain Access & Inspect				
COL-MWS-6002405			Gain Access & Inspect				
COL-MWS-6002413			Gain Access & Inspect				
COL-MWS-6002417			Gain Access & Inspect				
COL-MWS-6002424			Gain Access & Inspect				
COL-MWS-6002475			Gain Access & Inspect				
COL-MWS-6006804			Gain Access & Inspect				
COL-MWS-6006806			Gain Access & Inspect				
COL-MWS-6006807			Gain Access & Inspect				
COL-MWS-6006877			Gain Access & Inspect				
COL-MWS-6007535			Gain Access & Inspect				
COL-MWS-6007536			Gain Access & Inspect				
COL-MWS-6011019			Gain Access & Inspect				
COL-MWS-6014728			Gain Access & Inspect				
COL-MWS-7000154			Gain Access & Inspect				
COL-MWS-7000155			Gain Access & Inspect				
COL-MWS-7000156			Gain Access & Inspect				
COL-MWS-7000440			Gain Access & Inspect				
COL-MWS-7000441			Gain Access & Inspect				
COL-MWS-7001675			Gain Access & Inspect				
COL-MWS-7001662			Gain Access & Inspect				
COL-MWS-7001664			Gain Access & Inspect				
COL-MWS-7001684			Gain Access & Inspect				
COL-MWS-7002343			Gain Access & Inspect				
COL-MWS-7002344			Gain Access & Inspect				
COL-MWS-7002355			Gain Access & Inspect				
COL-MWS-7002492			Gain Access & Inspect				
COL-MWS-7004096			Gain Access & Inspect				
COL-MWS-7004102			Gain Access & Inspect				
COL-MWS-7005400			Gain Access & Inspect				
COL-MWS-7005401			Gain Access & Inspect				
COL-MWS-7006332			Gain Access & Inspect				
COL-MWS-7006814			Gain Access & Inspect				
COL-MWS-7006820			Gain Access & Inspect				
COL-MWS-7006858			Gain Access & Inspect				
COL-MWS-7006860			Gain Access & Inspect				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-7008161			Gain Access & Inspect				
COL-MWS-7009764			Gain Access & Inspect				
COL-MWS-7009768			Gain Access & Inspect				
COL-MWS-7009770			Gain Access & Inspect				
COL-MWS-7009779			Gain Access & Inspect				
COL-MWS-7009780			Gain Access & Inspect				
COL-MWS-7011183			Gain Access & Inspect				
COL-MWS-7011184			Gain Access & Inspect				
COL-MWS-7011185			Gain Access & Inspect				
COL-MWS-7012676			Gain Access & Inspect				
COL-MWS-7013445			Gain Access & Inspect				
COL-MWS-7013749			Gain Access & Inspect				
COL-MWS-7013915			Gain Access & Inspect				
COL-MWS-7013916			Gain Access & Inspect				
COL-MWS-7013919			Gain Access & Inspect				
COL-MWS-7013920			Gain Access & Inspect				
COL-MWS-7014156			Gain Access & Inspect				
COL-MWS-7015506			Gain Access & Inspect				
COL-MWS-4004553			High Frequency Cleaning				
COL-MWS-5011423	6.62		Gain Access & Inspect				
COL-MWS-1014036			0				
COL-MWS-2001455			0				
COL-MWS-2010015			0				
COL-MWS-4000436			0				
COL-MWS-4000438			0				
COL-MWS-4008595	8.85		0				
COL-MWS-5010559			0				
COL-MWS-1006609			High Frequency Cleaning				
COL-MWS-1012131			High Frequency Cleaning				
COL-MWS-1014283			High Frequency Cleaning				
COL-MWS-2013281			High Frequency Cleaning				
COL-MWS-3005315			High Frequency Cleaning				
COL-MWS-3015769	5.8		High Frequency Cleaning				
COL-MWS-4000499			High Frequency Cleaning				
COL-MWS-4004495	7.7		High Frequency Cleaning				
COL-MWS-4004570	17.59		High Frequency Cleaning				
COL-MWS-4004963	16.11		High Frequency Cleaning				
COL-MWS-4007824			High Frequency Cleaning				
COL-MWS-4007881	8.5		High Frequency Cleaning				
COL-MWS-6003374			High Frequency Cleaning				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-6006798	11.39		High Frequency Cleaning				
COL-MWS-1015557			High Frequency Cleaning				
COL-MWS-2008697			High Frequency Cleaning				
COL-MWS-2010769			High Frequency Cleaning				
COL-MWS-4005666	15.78		High Frequency Cleaning				
COL-MWS-4007231			High Frequency Cleaning				
COL-MWS-4008601			Root Control				
COL-MWS-4009046	15.53		Root Control				
COL-MWS-4005672			F.O.G. Control				
COL-MWS-4013091	5.84		F.O.G. Control				
COL-MWS-4013094	6.18		F.O.G. Control				
COL-MWS-4000420	8.91		High Frequency Cleaning				
COL-MWS-1006469			High Frequency Cleaning				
COL-MWS-2002201			High Frequency Cleaning				
COL-MWS-2003182			High Frequency Cleaning				
COL-MWS-2009092			High Frequency Cleaning				
COL-MWS-2009094	13.3		High Frequency Cleaning				
COL-MWS-2012397			High Frequency Cleaning				
COL-MWS-2012843			High Frequency Cleaning				
COL-MWS-2014383			High Frequency Cleaning				
COL-MWS-3014684			High Frequency Cleaning				
COL-MWS-4003839			High Frequency Cleaning				
COL-MWS-4003995			High Frequency Cleaning				
COL-MWS-4004968	10.64		High Frequency Cleaning				
COL-MWS-4005063			High Frequency Cleaning				
COL-MWS-4005632			High Frequency Cleaning				
COL-MWS-4005644			High Frequency Cleaning				
COL-MWS-4007962	22.76		High Frequency Cleaning				
COL-MWS-4008558	11.69		High Frequency Cleaning				
COL-MWS-4009191			High Frequency Cleaning				
COL-MWS-4013592	6.79		High Frequency Cleaning				
COL-MWS-4015831			High Frequency Cleaning				
COL-MWS-5004331			High Frequency Cleaning				
COL-MWS-5004772			High Frequency Cleaning				
COL-MWS-5004858			High Frequency Cleaning				
COL-MWS-5010521			High Frequency Cleaning				
COL-MWS-6008419			High Frequency Cleaning				
COL-MWS-7002340			High Frequency Cleaning				
COL-MWS-7003287			High Frequency Cleaning				

Asset ID	Manhole Depth (ft)	Recommended Renewal Project	Recommended O&M	Quantity (assumed 8' depth if no MH Depth)	Total Project Cost	Renewal Program Phase	Notes
COL-MWS-7012669			High Frequency Cleaning				
COL-MWS-7012671			High Frequency Cleaning				
COL-MWS-7013742	11.35		High Frequency Cleaning				
COL-MWS-7015507	8.82		High Frequency Cleaning				
COL-MWS-7015509	9.02		High Frequency Cleaning				
COL-MWS-7015510	10.51		High Frequency Cleaning				
COL-MWS-4008006			Root Control				
COL-MWS-6012896	5.72		Root Control				
COL-MWS-7011198			Root Control				

City of Riverside Public Works Department

UPDATE OF THE INTEGRATED

MASTER PLAN FOR THE WASTEWATER COLLECTION AND TREATMENT FACILITIES

VOL. 9

CHAPTER 3

Additional Special Collection System Studies

SSO Reporting and Response

carollo

Engineers...Working Wonders With Water®

City of Riverside Public Works Department

Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities

VOLUME 9: ADDITIONAL SPECIAL COLLECTION SYSTEM STUDIES

CHAPTER 3: SSO REPORTING AND RESPONSE

FINAL | June 2019

City of Riverside Public Works Department
Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities

VOLUME 9: ADDITIONAL SPECIAL COLLECTION SYSTEM STUDIES

CHAPTER 3: SSO REPORTING AND RESPONSE

Carollo Project No. 10495A00

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STATE OF CALIFORNIA

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Chapter 3

SSO REPORTING AND RESPONSE

3.1 Purpose

The purpose of this Chapter is to summarize the recommendations to the City's OERP per the River Watch Agreement with River Watch, provided in Volume 9, Chapter 1, Introduction, Appendix 1A.

3.1.1 Background

The SWRCB, as part of Statewide WDR Order No. 2006-0003-DWQ, requires that all municipalities and districts with over one mile of sanitary sewer pipelines develop a SSMP. One required component of the SSMP is an OERP. Carollo reviewed and revised the City's existing OERP to ensure its compliance with the Statewide WDR.

Section 2.2 SSO Reporting and Response of the River Watch Agreement between River Watch and the City requires the City to comply with the following:

- Include the following items in its reports submitted to the CIWQS:
  - The method or calculations used for estimating total spill volume, spill volume that reached surface waters and spill volume recovered.
  - For Category I and II Spills, contacting nearby residences and businesses to attempt to establish the SSO start time, durations and flow rate (if they have not been otherwise determined).
  - Taking photographs of the SSO flow using the San Diego or Central Coast Method array (if applicable to the SSO) to aid in establishing spill volume.
- Ensure that it is in full compliance with the Statewide WDR, including the preparation and implementation of a Sewage System OERP that contains the following detailed cleanup and disinfection procedures to reduce the potential for human health risks and adverse environmental impacts associated with an SSO event:
  - For Category I spills requiring a technical report, spills over 50,000 gals, or posing an imminent and substantial threat to public health, conduct sampling for human specific pathogens or human markers to ensure the protection of human health and the environment.
  - In any area in which the City cannot confirm that the public can be kept from unmitigated infectious materials from an SSO, the City shall post appropriate public notification signs and place barricades to keep vehicles and pedestrians away from contact with spilled sewage. For example, signs shall be posted at creeks and streams that have been contaminated as a result of an SSO and at visible access locations until the risk of exposure has subsided to acceptable background levels. Warning signs should be checked every day to ensure that they are still in place. Major spills warrant broader public notice. For major spills, the City shall contact local media when significant areas may have been contaminated by sewage and may pose a danger to

public health. The signs and other public notices will not be removed until the water quality sample results indicate satisfactory levels or the Health Department has determined there is no further risk to public health and the environment.

- Water quality sampling and testing is required to determine the extent and impact of the SSO whenever there is an SSO that either enters a surface water or is discharged to a surface where it poses a risk to public health or the environment. The water quality sampling procedures shall include:
  - Properly trained personnel shall collect samples if required, as soon as possible after the discovery of the SSO event.
  - Water quality samples should be collected from upstream of the SSO, from the SSO area, and downstream of the SSO in flowing water, where feasible. Additional samples should be collected near the point of entry of the spilled sewage and at intervals along the shore or impoundment appropriate for representative sampling.
  - The City shall take samples to determine the nature and extent of the SSO, per the Statewide WDR. Water surface basic analyses shall include fecal coliform, BOD, DO, and ammonia. Hard surface basic analyses shall include total coliform, fecal coliform, and ammonia. Additional samples will be taken to determine when posting of warning signs can be discontinued.
  - If the SSO poses an imminent and substantial endangerment to public health or the environment that cannot be fully eliminated through compliance with the City's current SOPs, the City shall consult a qualified biologist, health care specialist, or equivalent professional to mitigate the effects of the SSO on the environment.
- The City shall create a link from their website to the CIWQS SSO Public Reports and to SSO Reporting. The City shall notify its customers and the public of this web-based reporting system, including the City's commitment to respond to private parties submitting overflow reports.

3.2 Updates and Recommendations

This section summarizes the updates made to the City's Final OERP, as well as additional recommendations regarding the OERP.

3.2.1 Updates to the OERP

Updates to the City's OERP are summarized in Table 3.1, and an updated version is included in Appendix 3A.

Table 3.1 Updates to the City of Riverside's OERP

Item/Section	Description
General Organization	• Added Section numbers, page numbers.
Introduction (Section 1)	• Added "Background" (Section 1.1), including a sentence referencing the City's legal obligation to maintain compliance with the Statewide WDR. *This sentence is intended to satisfy Section 2.2.b of the River Watch Agreement, Attachment 1.* • Added "Technical Definition of a Sanitary Sewer Overflow" (Section 1.2). • Added "Organization" (Section 1.3).

Table 3.1 Updates to the City of Riverside's OERP (continued)

Item/Section	Description
Regulatory Requirements (Section 2)	• Added "SWRCB Requirements" (Section 2.1).
Overflow Emergency Response Procedure (Section 3)	• Revised "Receipt of Information Regarding a SSO" (Section 3.1). • Revised "Figure 1 – Initial Notification (normal hours)". • Revised "After Business Hours – Initial Notification" (Section 3.1.2). • Revised "Figure 2 – Initial Notification (after hours)". • Revised "Dispatch of Appropriate Crews to Site of Sanitary Sewer Overflow" (Section 3.2). • Added "Crew Instructions and Work Orders" (Section 3.2.1). • Revised "Arrival, Notification and Response" (Section 3.3). • Revised "Figure 3 – Arrival and Notification". • Deleted "Figure 4 – Additional Notifications", as dispatch maintains a list of contacts and information. • Added "Additional Resources" (Section 3.3.1). • Added "Overflow Containment, Correction and Clean-Up" (Section 3.4). • Revised "Responsibilities of Response Crew upon Arrival" (Section 3.4.1). • Added "Additional Measures under Potentially Prolonged Overflow Conditions" (Section 3.4.2). • Revised "Correction of Spill Cause" (Section 3.4.3). • Added "Preliminary Assessment of Damage to Private and Public Property" (Section 3.4.4). • Revised "Cleanup" (Section 3.4.5). • Revised "Figure 5 – Remediation". • Revised "Water Quality Monitoring Program" (Section 3.4.5.1). Included reference to the City's current Water Quality Monitoring Program. *This section is intended to satisfy Sections 2.2.b.i and 2.2.c of the River Watch Agreement, Attachment 1.* • Added "Field Supervision and Inspection" (Section 3.4.6). • Relocated "Crowd Control, Traffic Diversion and Other Emergency Operations" (Section 3.4.7). • Added "Overflow Report" (Section 3.5). *This section is intended to satisfy Sections 2.2.a.i, 2.2.a.ii and 2.2.a.iii of the River Watch Agreement, Attachment 1.* • Revised "Figure 6 – SSO Reporting". • Added "SSO Technical Report" (Section 3.5.1) *This section is based on the SWRCB Requirements for a Technical Report.*[(1)] • Added "Customer Satisfaction" (Section 3.6).
Public Advisory Procedure (Section 4)	• Added "Public Advisory Procedure" (Section 4). *This section is intended to satisfy Section 2.2.d of the River Watch Agreement, Attachment 1.* • Added "Temporary Signage" (Section 4.1). *This section is intended to satisfy Section 2.2.b.ii of the River Watch Agreement, Attachment 1.* • Added "Other Public Notification (Section 4.2).

Table 3.1 Updates to the City of Riverside's OERP (continued)

Item/Section	Description
Regulatory Agency Notification Procedure (Section 5)	• Added "Regulatory Agency Notification Procedure" (Section 5). • Added Table 1 "Regulatory Agency Notification Plan, OERP, City of Riverside".
Media Notification Procedure (Section 6)	• Added "Media Notification Procedure" (Section 6).
Distribution and Maintenance of OERP (Section 7)	• Added "Distribution and Maintenance of OERP" (Section 7). • Added "Submittal and Availability of OERP" (Section 7.1). • Added "Review and Update of OERP" (Section 7.3).
Appendix	• Revised "Spill Report Form" (Appendix A). • Revised "Flooding Data Sheet" (Appendix A). • Revised "Spill Volume Estimation Worksheet (Appendix A). • Revised "Manhole Estimation Methods" (Appendix A). • Revised "Containment Area Method Information" (Appendix A). • Added "Sanitary Sewer Overflow Warning Signs" (Appendix B).

Notes:
(1) https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2013/wqo2013_0058exec.pdf.

3.2.2 Related OERP Items

The City has added a link on their website to CIWQS SSO Public Reports, https://www.riversideca.gov/publicworks/sewer/lateral.asp. *This is intended to satisfy Sections 2.2.d and 2.4 of the River Watch Agreement, Attachment 1.*

3.2.3 Recommendations

Additional recommendations regarding the City's OERP are listed below:

- Edit the City's service request website, http://crmweb.riversideca.gov.
  - Under "Nature of the Problem" add "Sewer Spill" as an option in the pulldown menu.
  - Add "Date and Time Problem Was Noticed" as an additional field.
- Add a link on the City's website to CIWQS SSO Reporting (https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_main). *This is intended to satisfy Sections 2.2.d and 2.4 of the River Watch Agreement, Attachment 1.*

Appendix 3A

OVERFLOW EMERGENCY RESPONSE PLAN

OVERFLOW EMERGENCY RESPONSE PLAN

1. Introduction

The City of Riverside (City) is committed to the effective management, operation, and maintenance of its sanitary sewer system, providing world-class infrastructure facilities to serve its customers and protect the environment. This Overflow Emergency Response Plan (OERP) has been developed as part of the City of Riverside Sewer System Management Plan (SSMP), which focuses on the reduction of sanitary sewer overflows (SSOs). The effective date of this OERP is June 2019. This plan should be updated and modified as necessary to more closely reflect operating conditions and changes that may occur in SSO response and remediation procedures.

The City utilizes a systematic approach to SSO response and notification. From receipt of a SSO complaint to cleanup of a verified spill, various positions are responsible to ensure that proper procedures are followed. Each individual performs an important role in protecting our local environment.

1.1. Background

SSOs are overflows from sanitary sewer systems of domestic, commercial, or industrial wastewater. SSOs often cause a public nuisance, particularly when raw untreated wastewater is discharged to areas with high public exposure, such as streets or surface waters used for drinking, fishing, or body contact recreation. SSOs may pollute surface or ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters.

In an effort to reduce SSOs in the State of California, the State Water Resources Control Board (SWRCB), as part of State General Waste Discharge Requirements Order No. 2006-0003-DWQ (Statewide WDR), has established that all municipalities and districts with over one mile of sanitary sewer pipelines develop a SSMP. As part of the requirements for the completion of a SSMP, the SWRCB has required that municipalities and districts develop a site-specific OERP. The City shall ensure that it is in full compliance with its legal obligation under the Statewide WDR, and has prepared this OERP accordingly.

1.2. Technical Definition of a Sanitary Sewer Overflow

A SSO is defined as any overflow, release, discharge, or diversion of untreated or partially treated wastewater from a sanitary sewer system. There are four categories of SSOs as established by the Statewide WDR:

- **Category 1:** This category includes all discharges of untreated or partially treated wastewater of **any volume** resulting from a failure or flow condition in the City's sanitary sewer system that:

a. Reach surface water and/or reach a drainage channel tributary to a surface water; or

b. Reach a municipal separate storm sewer system and are not fully captured and returned to the

sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the municipal separate storm sewer system is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or ground water infiltration basin (e.g., infiltration pit, percolation pond).

- **Category 2:** This category includes all discharges of untreated or partially treated wastewater resulting from a failure or flow condition in the City's sanitary sewer system that:

a. Equal or exceed 1,000 gallons; and

b. **Do not** reach surface water, a drainage channel, or a municipal separate storm sewer system unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.

- **Category 3:** All other discharges of untreated or partially treated wastewater resulting from the City's sanitary sewer system failure or flow condition.

- **Private Lateral Sewage Discharge (PLSD):** Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the enrollee's sanitary sewer system or from other private sewer assets. PLSDs that the City becomes aware of may be voluntarily reported to the SSO Database.

As part of the Statewide WDR, all agencies that own or operate sanitary systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility are required to report Category 1, Category 2, and Category 3 SSOs. If the City does not have any SSOs in a calendar month, they are required to report a no spill certification.

1.3. Organization

The key elements of the OERP are addressed individually as follows:

- Section 1: Introduction
- Section 2: Regulatory Requirements
- Section 3: Overflow Response Procedure
- Section 4: Public Advisory Procedure
- Section 5: Regulatory Agency Notification Procedure
- Section 6: Media Notification Procedure
- Section 7: Distribution and Maintenance of OERP
- Appendix

2. Regulatory Requirements

2.1. SWRCB Requirements

The SWRCB requires that each wastewater collection system agency develop an OERP with the following elements:

- **Notification:** Provide SSO notification procedures.
- **Response:** Develop and implement a plan to respond to SSOs.
- **Reporting:** Develop procedures to report and notify SSOs per SSO Monitoring and Reporting Program.
- **Impact Mitigation:** Develop steps to contain wastewater, to prevent SSOs from reaching surface waters, and to minimize or correct any adverse impact from SSOs.

The Statewide WDR specifies that an OERP include, at a minimum, the following:

a. Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSO in a timely manner;

b. A program to ensure an appropriate response to all SSOs;

c. Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the monitoring reporting program (MRP), the California Water Code, other State Law, and other applicable Regional Water Board waste discharge requirements (WDR) or National Pollutant Discharge Elimination Program (NPDES) permit requirements. The SSMP should identify the officials who will receive immediate notification;

d. Procedures to ensure that appropriate staff are aware of and follow the OERP and are appropriately trained;

e. Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and

f. A program to ensure that all reasonable steps are taken to contain and prevent discharge of untreated or partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

3. Overflow Response Procedure

This section presents a strategy for City staff to mobilize labor, materials, tools, and equipment to mitigate

any condition which may cause or contribute to an SSO.

3.1. Receipt of Information Regarding a SSO

SSO communication procedures begin with the detection of the SSO. An overflow may be detected by the general public, City staff through routine maintenance activities, or by others. In the event of a perceived overflow in the City, an individual may contact the City's 3-1-1 Call Center. The City operates the Call Center to enable anyone in the City to report any issue needing City assistance. The Call Center can be contacted by dialing 3-1-1 from any phone in the City (when using a mobile phone or if outside the City, dial (951) 826-5311), using the 311 Mobile App, or using the website http://crmweb.riversideca.gov. Call Center staff receive complaints from individuals (Complaint Person or CP) and inquire about any details regarding the spill.

To effectively respond to calls regarding potential SSOs, Call Center staff should obtain all relevant information regarding the potential spill from the CP. This includes in general, the following:

a. Time and date call was received;

b. Specific location;

c. Description of problem;

d. Time possible overflow was noticed by the CP;

e. CP's name and phone number;

f. Observations of the CP (e.g., odor, duration, back, or front of property); and

g. Other relevant information that will enable the responding investigator and crews, if required, to quickly locate, assess, and stop the overflow.

Until verified by City staff, the report of a possible spill should not be referred to as a "sanitary sewer overflow."

3.1.1. Normal Business Hours – Initial Notification

Based on this information, Call Center staff generate a Spill Report (SR) (Appendix A) and send it to a Wastewater (WW) Operations Dispatcher. WW Operations Dispatchers first notify the WW Mechanical Supervisor or Senior WW Collections Technician and then dispatch the collections systems crew member(s) assigned by WW Supervisor to respond. This process is shown below in Figure 1.

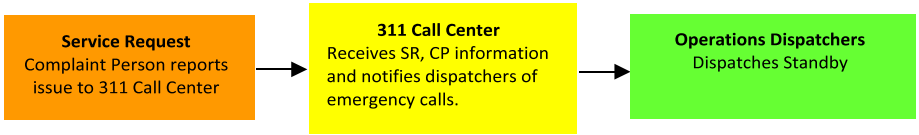


Figure 1 - Initial Notification (normal hours)

3.1.2. After Business Hours – Initial Notification

During after-hours, individuals calling the 311 Call Center are greeted by a recording which gives the option of reporting an emergency situation. Those calls are transferred to the Riverside Police Department where information is obtained and given to the on duty dispatcher or Senior WW Plant Supervisor. The dispatcher notifies the assigned standby responder(s) as indicated in Figure 2 below.

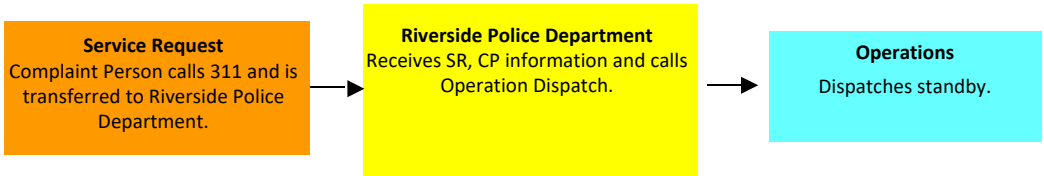


Figure 2 - Initial Notification (after hours)

3.2. Dispatch of Appropriate Crews to Site of Sanitary Sewer Overflow

In either scenario, once responders are dispatched, an internal email notification is sent to individuals with responsibility over SSO response. This email includes specifics of the reported SSO, including address and Ward number. Failure of any element within the City sewer system that threatens to cause or causes a SSO will trigger an immediate response to isolate and correct the problem. Crews and equipment shall be available to respond to any SSO location and shall be dispatched to the site of a reported SSO immediately. Additional maintenance and contract personnel shall be "on call" should extra crews be needed.

3.2.1. Crew Instructions and Work Orders

Responders should receive instructions regarding appropriate materials, supplies, and equipment needed by Dispatch. Dispatch will inform the response crew of all pertinent information regarding the spill.

Dispatch shall verify that the entire message has been received and acknowledged by the responders. All standard communications procedures should be followed. All responders to the site of a SSO shall proceed immediately to the site of the overflow. Any delays or conflicts in assignments must be immediately reported to Dispatch for resolution. Work orders are coordinated through the City's computerized maintenance management system (CMMS) software, "Oracle Utilities Work and Asset Management".

3.3. Arrival, Notification and Response

Upon arrival at the location of the reported SSO, the primary responder(s) determine(s) if the area is safe to enter. Upon safe entry, they determine if the reported spill is sewage and perform an onsite assessment of the area, including possible damage to private and public property. Pertinent information is reported to Dispatch who determines proper agency notifications as described in Figure 3. Dispatch maintains a list of contacts for said agencies, which shall be reviewed and updated when the OERP is reviewed and updated.

If Dispatch has not received findings from the field crew within a reasonable amount of time, Dispatch shall contact the responders to determine the status of the investigation. Dispatch shall also refer all pertinent information to the next shift, including any details of the problems described by customers.

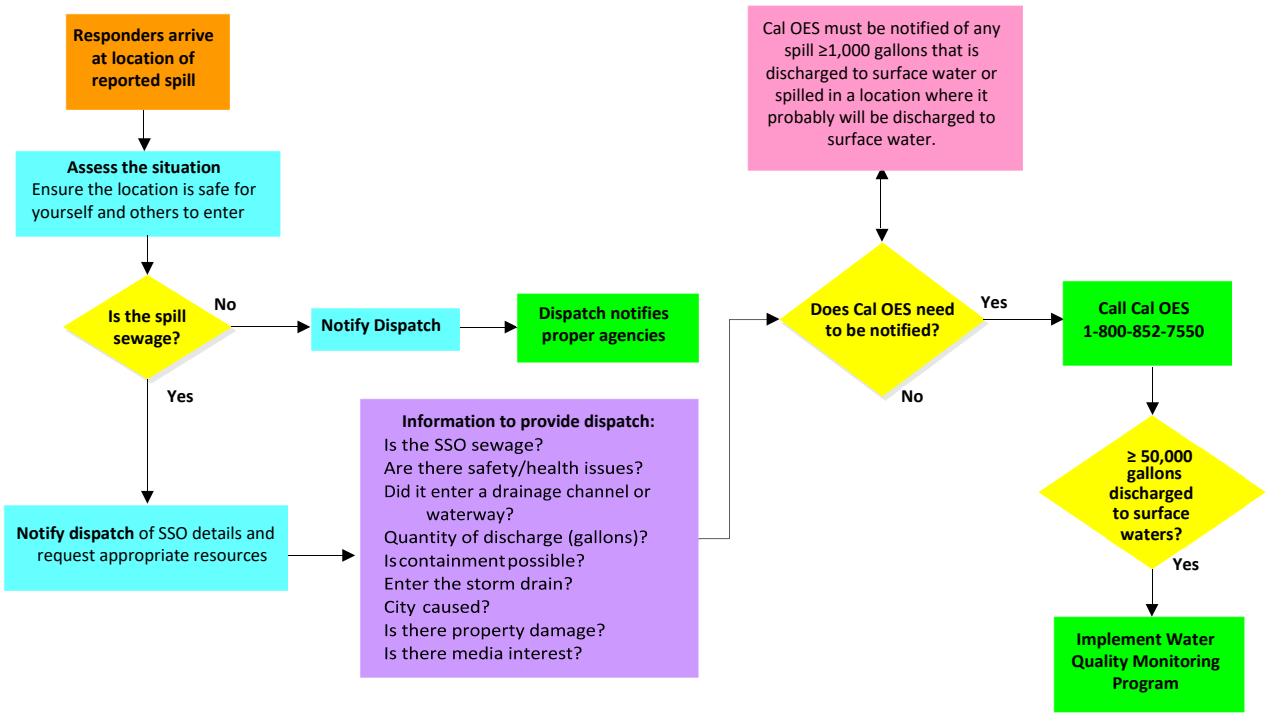


Figure 3 - Arrival and Notification

3.3.1. Additional Resources

Responding crews working at the site of a SSO shall communicate with Dispatch requests for additional personnel, material, supplies, and equipment. Dispatch shall coordinate the additional resources with the appropriate management and supervisory staff based on the resources needed.

3.4. Overflow Containment, Correction and Clean-Up

The City remains ready to respond upon notification and confirmation of an overflow. This section describes specific actions to be performed by the crews during a SSO.

The objectives of these actions are:

- To protect public health, environment, and property from sewage overflows and restore surrounding area back to normal as soon as possible;
- To establish perimeters and control zones with appropriate traffic cones and barricades, vehicles or use of natural topography (e.g., hills, berms);

- To document the SSO as accurately as possible without delaying containment and mitigation resources;
- To promptly notify appropriate regulatory agencies, including the SWRCB;
- To contain the SSO to the maximum extent possible including preventing the discharge of sewage into surface waters; and
- To minimize the City's exposure to any regulatory agency penalties and fines.

An important issue with respect to an emergency response is to make sure that the temporary actions necessary to divert flows and repair the problem do not produce a problem elsewhere in the system.

3.4.1. Responsibilities of Response Crew upon Arrival

While Dispatch is notifying proper agencies, responding personnel are securing the area and containing the spill, to protect public health and safety by mitigating the impact of the overflow to the extent possible.

Upon arrival at a SSO, the response crew shall do the following:

- Ensure the safety of the area. If the spill is in an area where human contact might occur, secure the area by posting "WARNING RAW SEWAGE" and setting up barricades in appropriate locations. Photographs of these proceedings are taken as appropriate.
- Control and contain the spill.
  - Determine the immediate destination of the overflow (e.g. storm drain, street curb gutter, body of water, creek bed, etc.);
  - Cover storm drain inlets and divert flows away from sensitive areas;
  - Isolate and secure all sources of spill materials to mitigate the spill volume, such as any bathrooms that may be add to the spill;
- Determine the cause of the overflow, e.g. sewer line blockage, pump station mechanical or electrical failure, sewer line break, etc.;
- Take immediate steps to stop the overflow if possible (e.g., relieve pipeline blockage, manually operate pump station controls, repair pipe, etc.). Extraordinary steps may be considered where overflows from private property threaten public health and safety (e.g., an overflow running off of private property into the public right-of-way);
- Determine if private property is impacted;
- Identify and request, if necessary, assistance or additional resources to correct the overflow, minimize its impacts or assist in the determination of its cause per Section 3.3.1.

3.4.2. Additional Measures under Potentially Prolonged Overflow Conditions

In the event of a prolonged sewer line blockage or a sewer line collapse, a determination should be made to set up a portable by-pass pumping operation around the obstruction. This may require the City to seek assistance from an outside contractor.

- Appropriate measures shall be taken to determine the proper size and number of pumps required to effectively handle the sewage flow.
- Continuous or periodic monitoring of the by-pass pumping operation shall be implemented as required.
- Regulatory agency issues shall be addressed in conjunction with emergency repairs.

3.4.3. Correction of Spill Cause

Following these steps, collections system personnel will determine if the cause of the spill is due to failure of the City's sanitary sewer system. If the spill was caused as a result of failure of the City's sewer system, crews will correct the problem following the guidelines in Standard Operating Procedure manuals for line cleaning, troubleshooting a pump station failure, or emergency sewer line repair. They will also recover any spilled sewage, determine if private property has been damaged, and notify dispatch of their findings.

If the spill is the result of failure in a private system, crews will contact the owner of the property to resolve the issue. If the owner cannot be contacted, Dispatch will notify either City Code Enforcement (residential areas) or the Environmental Compliance Section (commercial/industrial areas) to contact the owner. Once the owner has been contacted, the owner shall be responsible for resolving the issue by contacting a plumber or some other means. Whether the cause of the spill is due to City or private system failure, crews will photograph the scene and document relevant information regarding the situation. Should the overflow not be the responsibility of the City, but there is imminent danger to public health, public or private property, or to the quality of waters of the United States, then prudent emergency action should be taken until the responsible party assumes responsibility and takes the appropriate actions.

Figure 4 below outlines this process.

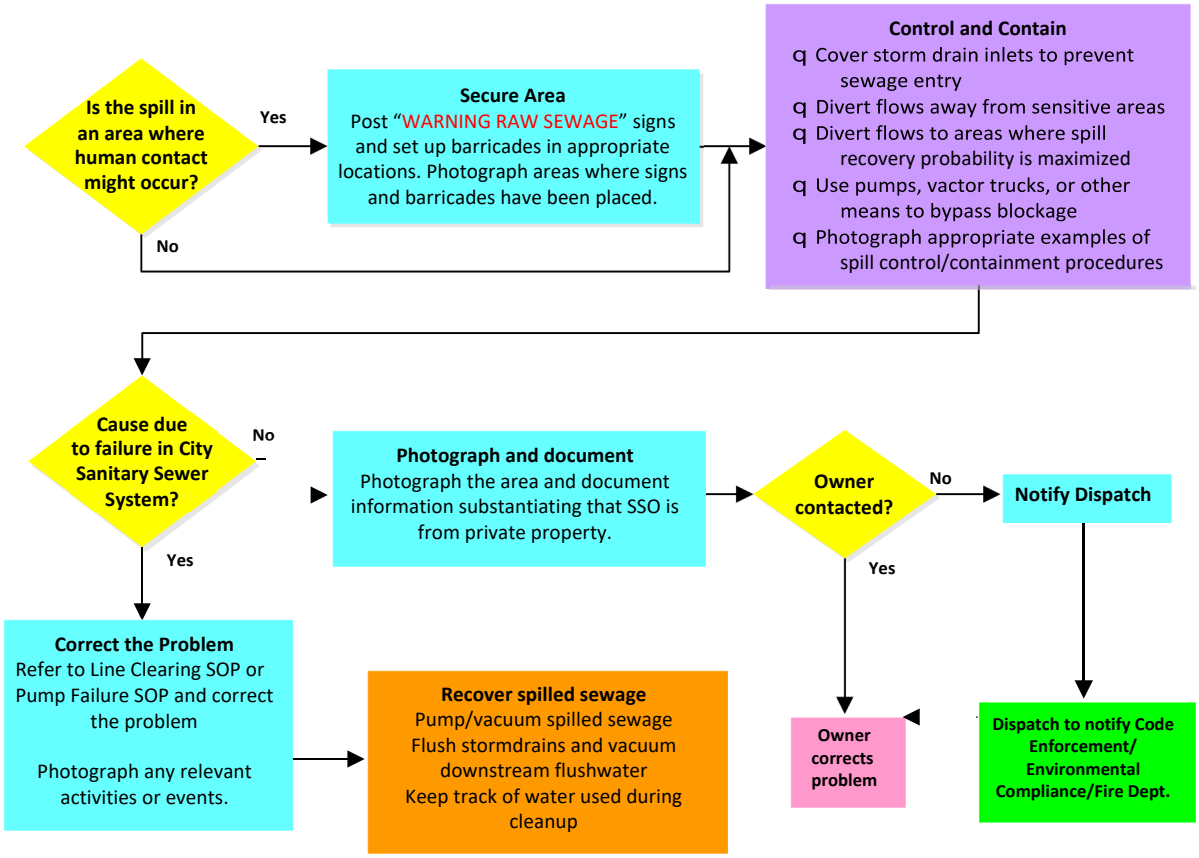


Figure 4 - Control, Contain, and Correct

3.4.4. Preliminary Assessment of Damage to Private and Public Property

The focus of the field response is to resolve the problem in an efficient manner and to protect public health and welfare. The response crews should use discretion in assisting individual tenants/property owners as reasonably as they can for SSOs in sewers not owned or maintained by the City. The City should be aware that it could face increased liability for any further damages inflicted to private property during such assistance. Appropriate still photographs and video footage, if possible, should be taken of the outdoor area of the SSO and impacted area in order to thoroughly document the nature and extent of impacts. Available photographs are to be forwarded to Dispatch with the Spill Report.

3.4.5. Cleanup

Once the cause of the spill has been corrected and spilled sewage has been recovered, any damage to property will be assessed and Dispatch will notify Risk Management. Collections systems crews will assess any environmental and/or health impacts arising from the spill. Any assessed environmental or health impacts will be addressed promptly with extreme care. If there are no environmental or health impacts, crews will disinfect the immediate area affected by the spill, notify Dispatch, and stand down. Dispatch notifies City staff and completes reports and data entry into the California Integrated Water Quality System (CIWQS) Online SSO Database as described in the next section. If there are environmental or health impacts, Dispatch is notified.

Sewer overflow sites are to be thoroughly cleaned after an overflow. No readily identified residue (e.g., sewage solids, papers, rags, plastics, rubber products) shall remain. Appropriate cleanup actions include the following:

- Where practical, the site shall be thoroughly flushed and cleaned of any sewage or wash-down water. Solids and debris are to be flushed, swept, raked, picked-up, and transported for proper disposal.
- Where appropriate, the overflow site is to be disinfected and deodorized.
- Where sewage has resulted in ponding, the pond should be pumped dry and the residue disposed of in accordance with applicable regulations and policies.
- If a pond area contains sewage, which cannot be pumped dry, it may be treated with bleach. If sewage has discharged into a body of water that may contain fish or other aquatic life, bleach or other appropriate disinfectant should not be applied and the California Department of Fish and Wildlife should be contacted for specific instructions. Any such area will be appropriately posted to prevent access and contact.
- Use of portable aerators may be required where complete recovery of sewage is not practical and where severe oxygen depletion in existing surface water is expected.

The overflow site is to be secured to prevent contact by members of the public until the site has been thoroughly cleaned. Posting, if required, should be undertaken pursuant to Section 4.1.

This process is shown in Figure 5 below.

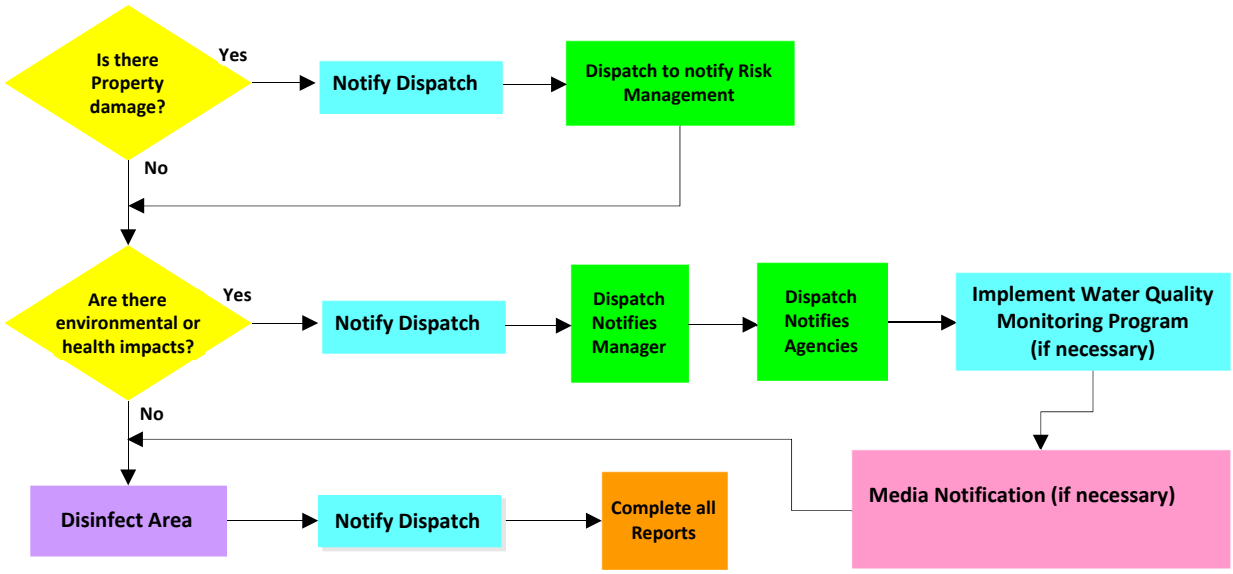


Figure 5 - Remediation

3.4.5.1. Water Quality Monitoring Program

The Overflow and Emergency Response Plan is designed to ensure that all reasonable steps are taken to contain and prevent the discharge of sewer overflows to waters of the United States. While the proper implementation of this plan will prevent most discharges to waters of the United States, there are situations when these waters become affected. Should this occur and if receiving water monitoring is necessary, the receiving water is evaluated and sampled in accordance with City's Water Quality Monitoring Program, as described below. When reporting SSO data, the City should provide discussions on potential influence from other sources such as storm drains, streams, and other water bodies, which can be heavily impacted by normal runoff during both dry and wet weather conditions. Water quality sampling and testing is required to determine the extent and impact of the SSO whenever there is an SSO that either enters a surface water (Category 1 SSO), is greater than 50,000 gallons, or is discharged to a surface where it poses an imminent and substantial threat to public health. Sampling for human specific pathogens or human markers shall be done to ensure the protection of human health and the environment. The water quality sampling procedures shall include:

a. Personnel properly trained in sample preparation, sample collection and chain of custody procedures shall collect samples. Samples should be collected as soon as possible after the discovery of the SSO event. (Sample collection will typically be completed by a Laboratory or Environmental Compliance staff member or a contract lab.)

b. The water quality samples should be collected, where feasible, from upstream of the spill, from the spill area, and downstream of the spill in flowing water. In addition, samples should be collected near the point of entry of the spilled sewage and at intervals along the shore or impoundment appropriate for representative sampling.

c. Pursuant to the Statewide WDR, Section D subsection 7, the City shall sample to determine the nature and extent of any SSO. The water surface basic analyses shall include fecal coliform, biochemical oxygen demand (BOD), dissolved oxygen, and ammonia. The hard surface basic analyses shall include total coliform, fecal coliform and ammonia. Additional samples will be taken to determine when posting of warning signs can be discontinued.

    a. The City's current Water Quality Monitoring Program also includes water surface basic analyses of pH, electrical conductivity, chemical oxygen demand, total dissolved solids, and total suspended solids.

d. If the SSO poses an imminent and substantial endangerment to public health or the environment that cannot be fully eliminated through compliance with the City's current SOPs, the City shall consult a qualified biologist, health care specialist or equivalent professional to mitigate the effects of the SSO on the environment.

e. The City shall sample after the spill to assess when water quality has returned to baseline conditions and the surface water is no longer impacted, allowing for the protection of human health and the environment. Post-spill sampling shall consist of collection at the same initial

locations and for the same initial constituents.

a. The City's current Water Quality Monitoring Program includes post-spill sampling for a period of up to four weeks, on approximately four separate sampling events.

3.4.6. Field Supervision and Inspection

The collection crew Supervisor and staff are responsible to visit and inspect the site of the overflow and to verify that all provisions of the OERP and other necessary actions are being met. The Collections Supervisor is responsible for confirming that the Spill Report is completed and that available data and information is forwarded to Riverside Water Quality Control Plant (RWQCP) Dispatch for entry into the CIWQS system. The Field Operations Manager will review and verify the field data prior to it being forwarded to RWQCP Dispatch and coordinate as needed with other work selections such as Environmental Compliance or Laboratory. Once final, the SSO CIWQS report is reviewed and certified by Regulatory Compliance as established in the Statewide WDR (see Section 5). Regulatory Compliance will complete any ongoing and follow-up reporting, updates and technical reports as needed.

3.4.7. Crowd Control, Traffic Diversion and Other Emergency Operations

Aside from those emergency procedures outlined in the preceding, other procedures such as traffic control and crowd control may be necessary in the event of a major sewer overflow. Collections systems crews are equipped with traffic cones, barricades, caution tape and other items that enable the control of traffic and crowds during minor events. In the event of a major spill, other Public Works crews, law enforcement, and fire personnel may be contacted to assist in emergency operations. These crews are experienced in closing lanes or streets, establishing detour routes, crowd control, and other emergency operations.

3.5. Overflow Report

During the processes described above, Collections Systems personnel complete the Spill Report Form (Appendix A) to record information about the SSO, calculate spill volume, and document actions taken. While Dispatch makes agency notifications concurrently with the actions of Collections Systems personnel at the scene, the completed Spill Report Form provides the critical information needed for Dispatch to properly report the SSO in the CIWQS SSO Database (https://ciwqs.waterboards.ca.gov/). The Field Operations Manager will review the report for accuracy prior to submittal to Dispatch. Regulatory Compliance will review and certify in CIWQS.

State Waste Discharge Requirements (WDR) identify four SSO Categories with varying reporting requirements. Figure 6 outlines SSO Category determination and the reporting requirements for each of the four SSO Categories. For Category 1 and 2 spills, Dispatchers enter all necessary information from the Spill Report Form and other correspondence to complete the draft SSO report in the CIWQS SSO Database within the time schedule provided in the reporting matrix found in Table 1. Category 3 spills must be certified within 30 days and, as such, should have a draft report completed within 15 days to provide ample review time. Following completion of the draft report, Regulatory Compliance will review and

certify the report.

Information regarding the SSO should include the following:

- Indication that the sewage overflow has reached surface waters (i.e., all overflows where sewage was observed running to surface waters, or there was obvious indication (e.g. sewage residue) that sewage flowed to surface waters); or

- Indication that the sewage overflow has <u>not</u> reached surface waters. Common characteristics of an SSO that has not reached surface water include:
  - Sewage overflows to covered storm drains (with no public access) where personnel verify, by inspection, that the entire volume is contained in a sump or impoundment and where complete clean-up occurs leaving no residue.
  - Preplanned or emergency maintenance jobs involving bypass pumping if access by the public to a bypass channel is restricted and subsequent complete clean-up occurs leaving no residue. (Any preplanned bypass under these circumstances will not be considered an overflow); and
  - Overflows where observation or on-site evidence clearly indicates all sewage was retained on land and did not reach surface water and where complete cleanup occurs leaving no residue.

- Determination of the start time of the sewer overflow by one of the following methods:
  - Date and time information received and/or reported to have begun and later substantiated by a response crew;
  - Contacting nearby residences or business owners, using every reasonable step, to attempt to establish the start time;
  - Visual observation; or
  - Pump station and lift station flow charts and other recorded data;

- Determination of the stop time of the sewer overflow by one of the following methods:
  - Contacting nearby residences or business owners, using every reasonable step, to attempt to establish the stop time;
  - When the blockage is cleared or flow is controlled or contained; or
  - The arrival time of the response crew, if the overflow stopped between the time it was reported and the time of arrival;

- Visual observations;

- An estimation of the rate of sewer overflow in gallons per minute (gpm) by one of the following criteria overflow (Appendix A contains guidance for the estimation of SSO flow rates):
  - Contacting nearby residences or business owners, using every reasonable step, to attempt to establish the SSO flow rate;
  - Direct observations of the overflow; or

  - Measurement of actual overflow from the sewer main;

- The method or calculations used for estimating total spill volume, spill volume that reached surface waters, and spill volume recovered (Appendix A contains guidance for the estimation of SSO volumes);
  - When the rate of overflow is known, multiply the duration of the overflow by the overflow rate; or
  - When the rate of overflow is not known, investigate the surrounding area for evidence of ponding or other indications of overflow volume;

- Photographs of the event;
  - Take photographs of the manhole flow at the SSO site using either the San Diego or Central Coast Method array (if applicable to the SSO), or other photographic evidence that may aid in establishing the spill volume;

- Assessment of any damage to the exterior areas of public/private property.

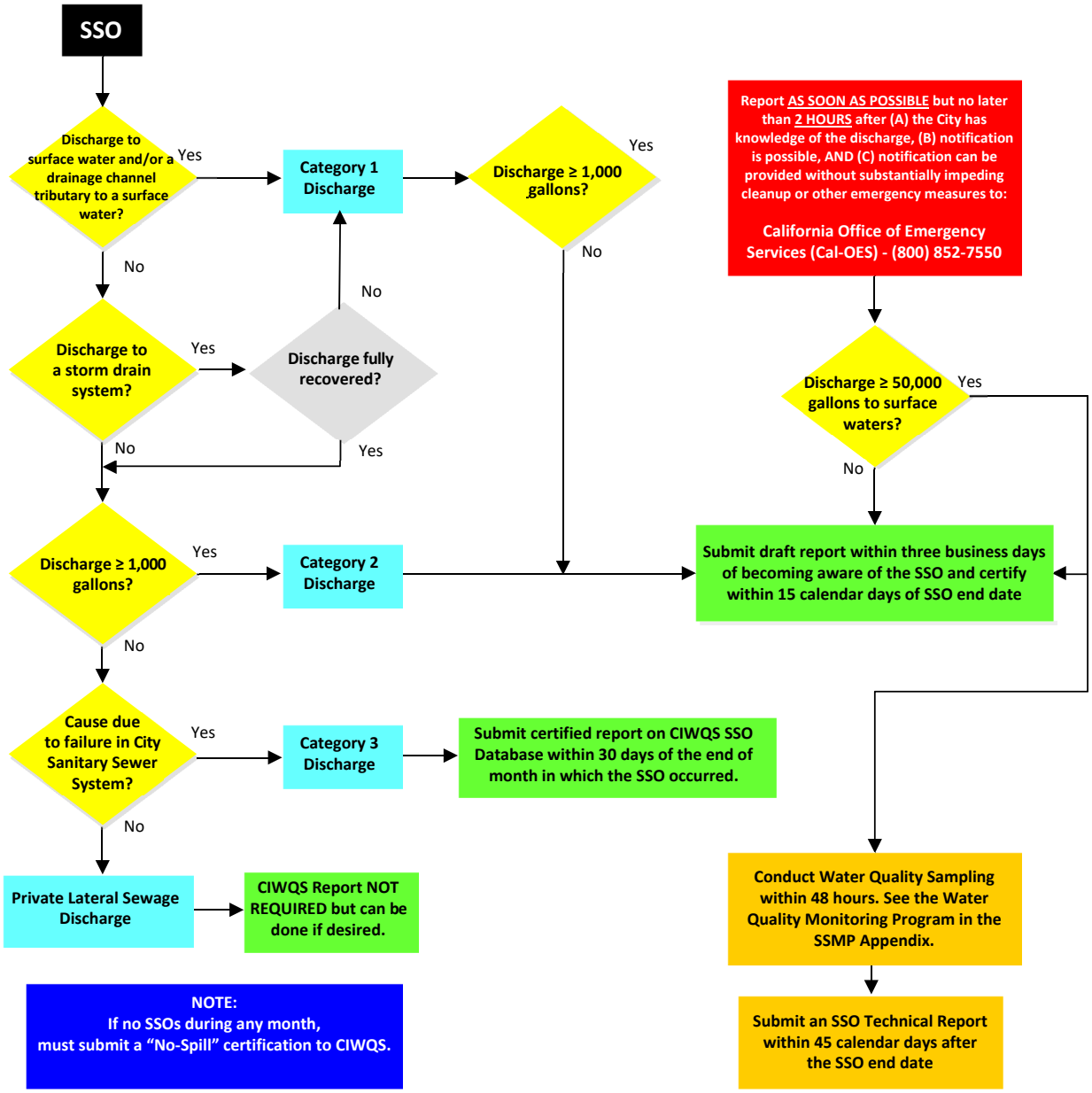


Figure 6 - SSO Reporting

3.5.1. SSO Technical Report

For Category 1 spills greater than or equal to 50,000 gallons, the City shall complete and submit an SSO Technical Report in the CIWQS Online SSO Database within 45 calendar days after the SSO end date. This report, which does not preclude the Water Boards from requiring more detailed analyses if requested, shall contain the following elements at a minimum:

- **Causes and Circumstances of the SSO:**
  - Complete and detailed explanation of how and when the SSO was discovered;

- Diagram showing the SSO failure point(s), appearance point(s), and final destination(s);
- Detailed description of the methodology employed and available data used to calculate the volume of the SSO and, if applicable, the SSO volume recovered;
- Detailed description of the cause(s) of the SSO;
- Copies of original field crew records used to document the SSO;
- Historical maintenance records for the failure location(s).

- **City's Response to SSO:**
  - Chronological narrative description of all actions taken by the City to terminate the SSO;
  - Explanation of how the SSMP OERP was implemented to respond to and mitigate the SSO;
  - Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

- **Water Quality Monitoring:**
  - Description of all water quality sampling activities conducted including analytical results and evaluation of the results;
  - Detailed location map illustrating all water quality sampling points.

3.6. Customer Satisfaction

Dispatch should follow-up in person or by telephone with the Complaint Person(s) reporting the overflow. The cause of the overflow and its resolution should be disclosed.

4. Public Advisory Procedure

This section describes the actions the City should take to limit public access to areas potentially impacted by discharges of pollutants to surface water bodies from the wastewater collection system. Notification shall be given by the City to all customers and other members of the public of the existence of the CIWQS web-based reporting system, including a commitment to respond to private parties submitting overflow reports. The sewer section of the City's website contains a link to CIWQS: https://www.riversideca.gov/publicworks/sewer/lateral.asp.

4.1. Temporary Signage

The City has primary responsibility for determining when to post notices of polluted surface water bodies or ground surfaces that result from uncontrolled wastewater discharges from its facilities. The postings do not necessarily prohibit use of recreational areas, unless posted otherwise, but provide a warning of potential public health risks due to sewage contamination. A sample warning signs for use by the City is provided in Appendix B.

In any area in which the City cannot confirm that the public can be kept from unmitigated infectious materials from an SSO, the City (Operations, Maintenance, and/or Environmental Compliance

Departments) shall post appropriate public notification signs and place barricades to keep vehicles and pedestrians away from contact with spilled sewage. For example, signs shall be posted at creeks and streams that have been contaminated as a result of an SSO and at visible access locations until the risk of exposure has subsided to acceptable background levels. Warning signs should be checked every day to ensure that they are still in place. Major spills warrant broader public notice. For major spills, the City's Office of Communications shall contact local media per Section 6 when significant areas may have been contaminated by sewage and may pose a danger to public health. The signs and other public notices will not be removed until the water quality sample results indicate satisfactory levels or the Health Department has determined there is no further risk to public health and the environment.

4.2. Other Public Notification

Should the posting of surface water bodies or ground surfaces subjected to a sewer overflow be deemed necessary by the spill response personnel, they shall contact Dispatch who shall determine the need for further public notification through the use of pre-scripted notices made available to the printed or electronic news media for immediate publication or airing, or by other measures (e.g., front door hangers). These measures shall be coordinated through the City's Office of Communications.

5. Regulatory Agency Notification Procedure

This section summarizes the procedures that City staff shall follow to provide formal notice to the appropriate regulatory agencies as necessary in the event of an SSO. Agency notifications shall be performed in parallel with other internal notifications. The procedures for providing notification of an SSO to the media are presented in Section 6. Internal notification and mobilization of personnel are detailed in Section 3. Table 1 summarizes the regulatory agency notification plan for each type of discharge.

The regulatory agency that must be notified if an SSO occurs varies depending on the type of discharge. Likewise, the time frame in which the appropriate agencies must be notified depends on the type of discharge. The Statewide WDR defines four types of SSOs, as summarized in Section 1.2 of this document. For the purpose of reporting of SSOs, however, there are three main types of spills where specific reporting time frames are required, as summarized, in order of severity, below:

- **Category 1 SSOs.** This SSO type includes spills, regardless of volume, that result in a discharge to surface water and/or a drainage channel, or discharges to a storm sewer system that are not fully captured and returned to the sanitary sewer system.

- **Category 2 SSOs.** This SSO type includes spills greater than 1,000 gallons that do not result in a discharge to surface water and/or a drainage channel, or discharges to a storm sewer system which are not fully captured and returned to the sanitary sewer system.

- **Category 3 SSOs.** This SSO type includes all other discharges of untreated or partially treated wastewater resulting from the City's sanitary sewer system failure or flow condition.

- **Private Lateral Sewage Discharges.** This SSO type includes discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the enrollee's sanitary sewer system or from other private sewer assets. PLSDs that the City becomes aware of may be voluntarily reported to the SSO Database. The SWRCB encourages notification of Cal OES for PLSDs greater than or equal to 1,000 gallons that result in or may result in a discharge to surface waters.

Table 1: Regulatory Agency Notification Plan, Overflow Emergency Response Plan, City of Riverside

Agency	Contact Information	Action	Criteria
Category 1 SSOs			
California Office of Emergency Services (Cal OES)	Phone: (800) 852-7550	Contact within 2 hours Obtain notification control number	Discharge to surface water or drainage channel
SWRCB	https://ciwqs.waterboards.ca.gov/	Draft CIWQS report within 3 business days Final CIWQS report within 15 calendar days of SSO end date	Discharge to surface water or drainage channel
SWRCB	https://ciwqs.waterboards.ca.gov/	Water quality sampling within 48 hours per Water Quality Monitoring Program Final SSO technical report within 45 calendar days of SSO end date	Discharge to surface water or drainage channel Greater than or equal to 50,000 gallons
Category 2 SSOs			
SWRCB	https://ciwqs.waterboards.ca.gov/	Draft CIWQS report within 3 business days Final CIWQS report within 15 calendar days of SSO end date	Greater than or equal to 1,000 gallons No discharge to surface water or drainage channel
Category 3 SSOs			
SWRCB	https://ciwqs.waterboards.ca.gov/	Final CIWQS report within 30 days of the end of the calendar month	Less than 1,000 gallons No discharge to surface water or drainage channel
Private Lateral Sewage Discharges			

Agency	Contact Information	Action	Criteria
SWRCB	https://ciwqs.waterboards.ca.gov/	Final CIWQS report within 30 days of the end of the calendar month	Reporting is voluntary, but encouraged for discharges greater than or equal to 1,000 gallons that result or may result in a discharge to surface water or drainage channel
No Spill Certifications			
SWRCB	https://ciwqs.waterboards.ca.gov/	Within 30 days after the end of each calendar month	No SSOs during the calendar month
Collection System Questionnaire			
SWRCB	https://ciwqs.waterboards.ca.gov/	Update and certify every 12 months	

6. Media Notification Procedure

When an overflow has been confirmed and is a threat to public health, the following steps should be taken to notify the media:

- Response crew verifies overflow and reports back to Dispatch, who informs the Environmental Compliance Supervisor.
- The Environmental Compliance Supervisor confirms with the Deputy Public Works Director, who contacts the City's Office of Communications.
- Calls received by Dispatch from the media at any time are to be referred to the City's Office of Communications.
- Only specified personnel shall conduct interviews with the media.

7. Distribution and Maintenance of OERP

This plan was prepared in conjunction with and is an important element of the City of Riverside SSMP. As such, the OERP should be periodically reviewed and modified as necessary to reflect operational and policy changes. Audits of the plan should also be performed in conjunction with the larger SSMP program audits, as outlined in the City of Riverside SSMP.

7.1. Submittal and Availability of OERP

Copies of the OERP and any amendments should be distributed to all departments, divisions, and personnel that are heavily involved with the SSMP or OERP programs. All other personnel who may become incidentally involved in responding to SSOs should be familiar with the OERP.

7.2. Training

The City conducts regular training on the OERP for all personnel involved in overflow response. In these trainings, the plan is reviewed and discussed to ensure proper procedures are understood. Real life experiences and scenarios are shared and reviewed to enhance training sessions.

7.3. Review and Update of OERP

The City is ultimately responsible for keeping the OERP up to date. The OERP should be reviewed at a predefined time interval for outdated material and should also be updated whenever the following occurs:

- Specified by the Deputy Public Works Director or Regulatory Compliance Manager, or designated representative;
- The SSMP plan audit indicates that material needs to be revised or added;
- Responsibilities of personnel involved in SSO response, mitigation or reporting change for various reasons; or
- Governing laws, rules or regulations change.

Appendix

Appendix A Spill Report Forms

- Spill Report Form
- Flooding Data Sheet
- Spill Volume Estimation Worksheet
- Manhole Estimation Methods
- Containment Area Method Information

Appendix B Sanitary Sewer Overflow Warning Sign

Appendix A

SPILL REPORT FORMS

SSO Event ID _____

SPILL REPORT FORM

General Information

Date: _____ Crew/Truck: _____ Assigned by: _____

Spill Location Name: _____ SSO Event ID:_____

Street Address: _____ Latitude/Longitude: _____

Map Page: _____ Manhole ID: _____ Lift Station ID: _____

Weather Conditions: _____

Spill Location Description: _____

Spill Details

Spill Appearance Point(s): □ Building □ Force Main □ Gravity Mainline □ Manhole □ LIft Station □ Property Line Clean Out □ Building Clean Out □ Other _____

Number of Appearance Points: _____

Final Spill Destination(s): □ Building □ Paved Surface □ Storm Drain □ Curb/Gutter □ Drainage Channel □ Unpaved Surface □ Surface Water □ Other _____

Name of Impacted Surface Water: _____

Name of Impacted Beach(es): _____

Chance of Human Contact? □ Yes □ No Health Warnings Posted? □ Yes □ No Location: _____

Spill Notes: _____

Estimated spill **start** date/time: _____/_____/_____ ____:____ AM / PM

City **notification** date/time: _____/_____/_____ ____:____ AM / PM

Estimated **crew arrival** date/time: _____/_____/_____ ____:____ AM / PM

Estimated spill **end** date/time: _____/_____/_____ ____:____ AM / PM

Blockage/Failure Location(s): □ Building □ Force Main □ Gravity Mainline □ Manhole □ Lift Station □ City Lateral □ Private Lateral □ Other _____

Check Upstream/Downstream Manholes for Problems? □ Yes □ No Initials: _____

Private Sewer Lateral Discharge/Owner's Problem? □ Yes □ No

Give Owner Private Sewer Lateral Policy? □ Yes □ No Initials: _____

Failed sewer asset information at point of blockage or failure:

Pipe Diameter _____ in Pipe Material _____ Estimated age of asset _____ years

Spill Cause: □ Roots □ Grease □ Debris □ Infrastructure / Structural Defect □ Septic Tank

□ Vandalism □ Construction □ Flow Exceeded Capacity □ Lift Station Failure □ Other _____

Spill Cause Notes: _____

Was spill associated with a storm event? □ Yes □ No

Spill Response, Containment, Clean Up

Spill Response Activity(ies): □ Contained all or portion of spill □ Restored flow □ Clean up □ CCTV of sewer to determine cause □ Repair sewer pipe or asset □ Returned all or portion of spill to sewer system □ Water Quality Monitoring □ Other _____

Spill Response Completion Date/Time: _____/_____/_____ ____:____ AM / PM

Spill Response Measures: _____

_____

_____

Estimated Amount of Spill Returned to System: _____% _____ gal

Method of Return: Vactor Truck _____ Tank Loads _____

Pump Type _____ Run Time _____

Amount of fresh water used to clean up the spill site/area: _____ gal

Area Disinfected? □ Yes □ No Lysol used: _____ gal

Clean Affected Storm Drain System? □ Yes □ No Amount cleaned _____ ft Basins _____

Clean Up Measures: _____

_____

_____

Map/Drawing of Spill Area:

Notifications to Dispatch	Notes	Time	Initials
Main Line Open (Blockage Clear)			
Estimated Amount of Spill			
Estimated Spill Volume Recovered			
Storm Drain/Drainage Channels Affected			
Surface Water Affected			
Need Assistance at Site			
Flooding			
Need Code Enforcement/EC?			
Containment/Clean Up			
Water Quality Monitoring Needed			

Notes: _____

_____

_____

SSO Event ID _____

FLOODING DATA SHEET

General Information

Date: _____ Crew/Truck: _____ Assigned by: _____

Completed By: _____

Equipment Used: _____

	Circle One		Initials
Was Flooding Caused by City Blockage?	Yes	No	_____
Was Flooding Caused by Cleaning of City Lines?	Yes	No	_____
Was Risk Management Notified?	Yes	No	_____
Was Code Enforcement/Environmental Compliance Notified?	Yes	No	_____

	Circle One		
Type:	City Lateral	Private Lateral	Cause of Blockage: _____
Televised Lateral:	Yes	No	Location of Blockage: _____
Is Follow-Up Needed:	Yes	No	(if yes, specify in Comments)

Comments: _____

_____

_____

Location #1

Street Address: _____

Resident's Name: _____ Phone #: _____

Owner's Name: _____ Phone #: _____

Number of Rooms Flooded: _____

Description of Photos: _____

_____

Location #2

Street Address: _____

Resident's Name: _____ Phone #: _____

Owner's Name: _____ Phone #: _____

Number of Rooms Flooded: _____

Description of Photos: _____

_____

SSO Event ID _____

SPILL VOLUME ESTIMATION WORKSHEET

Map Page: _____ Manhole ID: _____ Lift Station ID: _____

Spill Volume Estimation Method: □ Manhole w/Cover in Place (Table A) □ Manhole w/Cover Removed (Table B) □ Flow out of Manhole Pick Hole (Table C) □ Containment Area

Manhole Methods:

Manhole Casting Size: _____ 24" _____ 36"

Maximum Spill Discharge Height: _____ inches

SSO Flow Rate (from Table A, B, or C): _____ gpm

Attach photos

Flow Estimate from Photos (per San Diego Method): _____ gpm

Containment Area Method:

Surface(s): □ Asphalt □ Concrete □ Dirt □ Manhole □ Landscape □ Inside Building □ Other

	Shape	**Length/ Base (ft)**	**Width/ Height (ft)**	**Diameter (ft)**	**Average Depth (ft)***	**% Wet**	**Soil Water Content (%)****	**Volume (ft^3)**	**Volume (gal)**
Area 1						100%			
Area 2						100%			
Area 3						100%			
Area 4						100%			
Area 5						100%			
Area 6						100%			
Area 7						100%			
Area 8						100%			
Area 9						100%			
Area 10						100%			
Total									

* For stain on concrete, use 0.0026' (1/32"); For stain on asphalt, use 0.0013' (1/64")

** For spill on soil, determine Water Content of Soil and multiply wetted area by Soil Water Content (%)

Water Content of Soil:

Area of dry soil: _____ ft^2

Area of wetted soil (after 1 gal of water soaked in for 15 min): _____ ft^2

Depth of wetted soil: _____ ft _____ ft _____ ft

Average depth of wetted soil: _____ ft

Volume of wetted soil: _____ ft^3 x 7.48 gal/ft^3 = _____ gal

Water Content: _____ gal divided by 1 gal x 100 % = _____ %

SSO Event ID _____

Map/Drawing of Spill Area:

Conversion		
Inches	**To**	**Feet**
1/8”	=	0.01’
1/4”	=	0.02’
3/8”	=	0.03’
1/2”	=	0.04’
5/8”	=	0.05’
3/4”	=	0.06’
7/8”	=	0.07’
1”	=	0.08’
2”	=	0.17’
3”	=	0.25’
4”	=	0.33’
5”	=	0.42’
6”	=	0.50’
7”	=	0.58’
8”	=	0.67’
9”	=	0.75’
10”	=	0.83’
11”	=	0.92’
12”	=	1.00’

Estimated Spill Volume:

NOTE: Do not include water used for clean-up in these volumes.

Estimated Spill Volume	Separate storm drain that flows to surface water body	Drainage channel that flows to surface water body	Directly reaches surface water body	Discharge to land
Amount that reached the following… (gal)				
Amount recovered from… (gal)				
Total (gal)				

Total estimated spill volume: _____ gal

Total estimated volume of spill recovered: _____ gal

Did the spill discharge to a drainage channel and/or surface water? □ Yes □ No

Did the spill discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system? □ Yes □ No

Water Quality Monitoring Program

(spills ≥ 50,000 gal that reach surface water body)

- Who: Properly trained personnel performing sampling and analysis
- Who: Sample results reported to Regional Water Quality Control Board
- Where: Samples taken upstream of spill, at spill, downstream of spill
- What:
    - Water surface analyses: fecal coliform, BOD, dissolved oxygen, ammonia
    - Hard surface analyses: total coliform, fecal coliform, ammonia

TABLE 'A'

ESTIMATED SSO FLOW OUT OF M/H WITH COVER IN PLACE

24" COVER

Height of spout above M/H rim **H** in inches	S S O FLOW **Q** in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.001	
1/2	3	0.004	
3/4	6	0.008	
1	9	0.013	
1 1/4	12	0.018	
1 1/2	16	0.024	
1 3/4	21	0.030	
2	25	0.037	
2 1/4	31	0.045	
2 1/2	38	0.054	
2 3/4	45	0.065	
3	54	0.077	
3 1/4	64	0.092	
3 1/2	75	0.107	
3 3/4	87	0.125	
4	100	0.145	
4 1/4	115	0.166	
4 1/2	131	0.189	
4 3/4	148	0.214	
5	166	0.240	
5 1/4	185	0.266	
5 1/2	204	0.294	
5 3/4	224	0.322	6"
6	244	0.352	
6 1/4	265	0.382	
6 1/2	286	0.412	
6 3/4	308	0.444	
7	331	0.476	
7 1/4	354	0.509	
7 1/2	377	0.543	
7 3/4	401	0.578	8"
8	426	0.613	
8 1/4	451	0.649	
8 1/2	476	0.686	
8 3/4	502	0.723	
9	529	0.761	

36" COVER

Height of spout above M/H rim **H** in inches	S S O FLOW **Q** in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.002	
1/2	4	0.006	
3/4	8	0.012	
1	13	0.019	
1 1/4	18	0.026	
1 1/2	24	0.035	
1 3/4	31	0.044	
2	37	0.054	
2 1/4	45	0.065	
2 1/2	55	0.079	
2 3/4	66	0.095	
3	78	0.113	
3 1/4	93	0.134	
3 1/2	109	0.157	
3 3/4	127	0.183	
4	147	0.211	
4 1/4	169	0.243	
4 1/2	192	0.276	
4 3/4	217	0.312	6"
5	243	0.350	
5 1/4	270	0.389	
5 1/2	299	0.430	
5 3/4	327	0.471	
6	357	0.514	
6 1/4	387	0.558	8"
6 1/2	419	0.603	
6 3/4	451	0.649	
7	483	0.696	
7 1/4	517	0.744	
7 1/2	551	0.794	
7 3/4	587	0.845	10"
8	622	0.896	
8 1/4	659	0.949	
8 1/2	697	1.003	
8 3/4	734	1.057	
9	773	1.113	

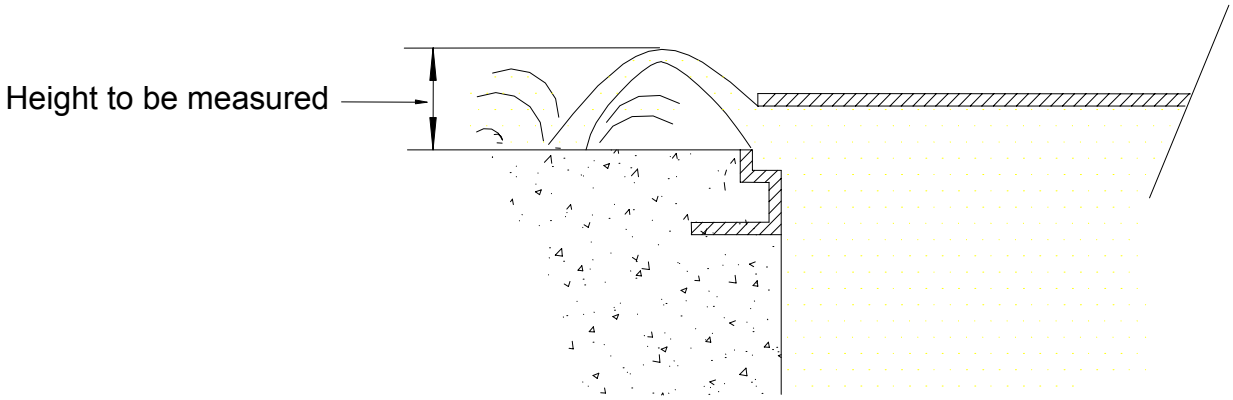
Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

The formula used to develop Table A measures the maximum height of the water coming out of the maintenance hole above the rim. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is unseated and slightly elevated on a 24” casting. The maximum height of the discharge above the rim is 5 ¼ inches. According to Table A, these conditions would yield an SSO of 185 gallons per minute.

FLOW OUT OF M/H WITH COVER IN PLACE



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

TABLE 'B'

ESTIMATED SSO FLOW OUT OF M/H WITH COVER REMOVED

24" FRAME

Water Height above M/H frame **H** in inches	S S O FLOW **Q** in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	28	0.04	
1/4	62	0.09	
3/8	111	0.16	
1/2	160	0.23	
5/8	215	0.31	6"
3/4	354	0.51	8"
7/8	569	0.82	10"
1	799	1.15	12"
1 1/8	1,035	1.49	
1 1/4	1,340	1.93	15"
1 3/8	1,660	2.39	
1 1/2	1,986	2.86	
1 5/8	2,396	3.45	18"
1 3/4	2,799	4.03	
1 7/8	3,132	4.51	
2	3,444	4.96	21"
2 1/8	3,750	5.4	
2 1/4	3,986	5.74	
2 3/8	4,215	6.07	
2 1/2	4,437	6.39	
2 5/8	4,569	6.58	24"
2 3/4	4,687	6.75	
2 7/8	4,799	6.91	
3	4,910	7.07	

36" FRAME

Water Height above M/H frame **H** in inches	S S O FLOW **Q** in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	49	0.07	
1/4	111	0.16	
3/8	187	0.27	6"
1/2	271	0.39	
5/8	361	0.52	8"
3/4	458	0.66	
7/8	556	0.8	10"
1	660	0.95	12"
1 1/8	1,035	1.49	
1 1/4	1,486	2.14	15"
1 3/8	1,951	2.81	
1 1/2	2,424	3.49	18"
1 5/8	2,903	4.18	
1 3/4	3,382	4.87	
1 7/8	3,917	5.64	21"
2	4,458	6.42	
2 1/8	5,000	7.2	24"
2 1/4	5,556	8	
2 3/8	6,118	8.81	
2 1/2	6,764	9.74	
2 5/8	7,403	10.66	
2 3/4	7,972	11.48	30"
2 7/8	8,521	12.27	
3	9,062	13.05	
3 1/8	9,604	13.83	
3 1/4	10,139	14.6	
3 3/8	10,625	15.3	36"
3 1/2	11,097	15.98	
3 5/8	11,569	16.66	
3 3/4	12,035	17.33	
3 7/8	12,486	17.98	
4	12,861	18.52	
4 1/8	13,076	18.83	
4 1/4	13,285	19.13	
4 3/8	13,486	19.42	

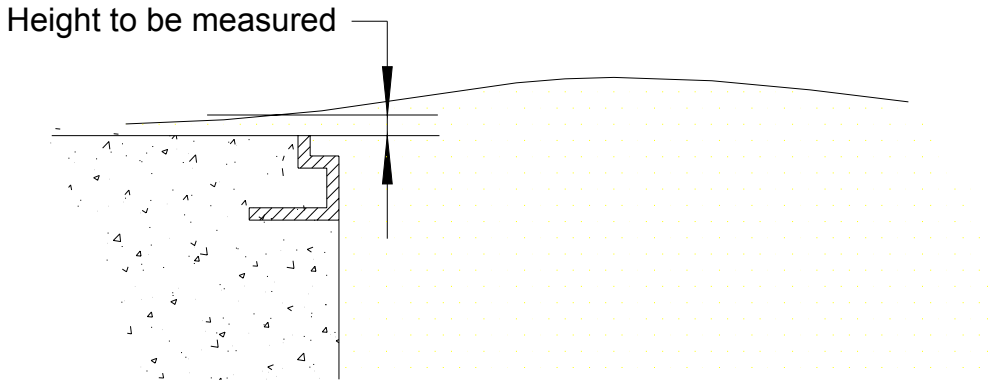
Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

The formula used to develop Table B for estimating SSO's out of maintenance holes without covers is based on discharge over curved weir -- bell mouth spillways for 2" to 12" diameter pipes. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is off and the flow coming out of a 36" frame maintenance hole at one inch (1") height will be approximately 660 gallons per minute.

FLOW OUT OF M/H WITH COVER REMOVED (TABLE "B")



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

TABLE 'C'

ESTIMATED SSO FLOW OUT OF M/H PICK HOLE

Height of spout above M/H cover **H** in inches	SSO FLOW **Q** in gpm	Height of spout above M/H cover **H** in inches	SSO FLOW **Q** in gpm	
1/8	1.0	5 1/8	6.2	
1/4	1.4	5 1/4	6.3	
3/8	1.7	5 3/8	6.3	
1/2	1.9	5 1/2	6.4	
5/8	2.2	5 5/8	6.5	
3/4	2.4	5 3/4	6.6	
7/8	2.6	5 7/8	6.6	
1	2.7	6	6.7	
1 1/8	2.9	6 1/8	6.8	
1 1/4	3.1	6 1/4	6.8	
1 3/8	3.2	6 3/8	6.9	Unrestrained
1 1/2	3.4	6 1/2	7.0	M/H cover will
1 5/8	3.5	6 5/8	7.0	start to lift
1 3/4	3.6	6 3/4	7.1	
1 7/8	3.7	6 7/8	7.2	
2	3.9	7	7.2	
2 1/8	4.0	7 1/8	7.3	
2 1/4	4.1	7 1/4	7.4	
2 3/8	4.2	7 3/8	7.4	
2 1/2	4.3	7 1/2	7.5	
2 5/8	4.4	7 5/8	7.6	
2 3/4	4.5	7 3/4	7.6	
2 7/8	4.6	7 7/8	7.7	
3	4.7	8	7.7	
3 1/8	4.8	8 1/8	7.8	
3 1/4	4.9	8 1/4	7.9	
3 3/8	5.0	8 3/8	7.9	
3 1/2	5.1	8 1/2	8.0	
3 5/8	5.2	8 5/8	8.0	
3 3/4	5.3	8 3/4	8.1	
3 7/8	5.4	8 7/8	8.1	
4	5.5	9	8.2	
4 1/8	5.6	9 1/8	8.3	
4 1/4	5.6	9 1/4	8.3	
4 3/8	5.7	9 3/8	8.4	
4 1/2	5.8	9 1/2	8.4	
4 5/8	5.9	9 5/8	8.5	
4 3/4	6.0	9 3/4	8.5	
4 7/8	6.0	9 7/8	8.6	
5	6.1	10	8.7	

Note: This chart is based on a 7/8 inch diameter pick hole

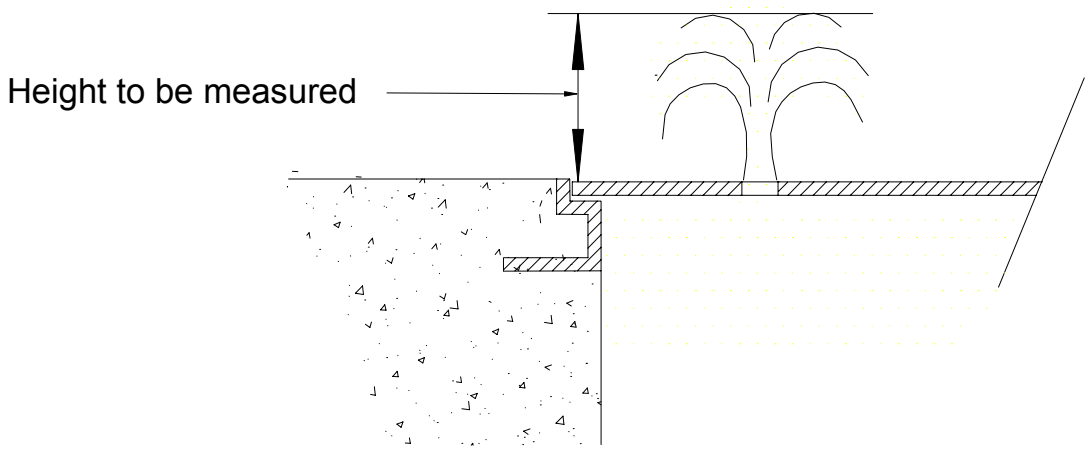
Disclaimer: This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

The formula used to develop Table C is Q=CcVA, where Q is equal to the quantity of the flow in gallons per minute, Cc is equal to the coefficient of contraction (.63), V is equal to the velocity of the overflow, and A is equal to the area of the pick hole.[2] If all units are in feet, the quantity will be calculated in cubic feet per second, which when multiplied by 448.8 will give the answer in gallons per minute. (One cubic foot per second is equal to 448.8 gallons per minute, hence this conversion method).

Example Overflow Estimation:

The maintenance hole cover is in place and the height of water coming out of the pick hole seven-eighths of an inch in diameter (7/8") is 3 inches (3”). This will produce an SSO flow of approximately 4.7 gallons per minute.

FLOW OUT OF VENT OR PICK HOLE (TABLE "C")



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

[2] Velocity for the purposes of this formula is calculated by using the formula h = v squared / 2G, where h is equal to the height of the overflow, v is equal to velocity, and G is equal to the acceleration of gravity.

City of San Diego
Metropolitan Wastewater Department

Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

*All estimates are calculated in **gallons per minute (gpm)***

Wastewater Collection Division
(619) 654-4160

Flow Estimation Pictures

5 gpm

25 gpm

50 gpm

100 gpm

150 gpm

200 gpm

225 gpm

250 gpm

275 gpm

All photos were taken during a demonstration using metered water from a hydrant in cooperation with the City of San Diego's Water Department.

rev. 4/99

Areas and Volumes

Spill Estimation Guide

PURPOSE

The purpose of this guide is to assist with the estimation of the Volume of a Sewage Spill. It has limited application, as it can be used on dry surfaces where the limits of the spill footprint can be determined and in instances when the spill is contained. It does not require that the Spill Duration and Spill Flow Rate be known. However, any and all information available should be used if it helps to make a more accurate estimate.

HOW IT WORKS

This guide contains formulas for determining the volume of some basic geometric shapes and some simple conversions that are necessary to determine volume (in gallons.) Any sewage spill will leave a 'wetted footprint' on the surfaces affected. This guide will help you to determine the area of the wetted footprint of the spill. The wetted footprint will not likely be a geometric shape that is easy to determine the area. You will have to be creative and find the familiar shapes within the shape. This will be demonstrated later in the guide. After determining the area contacted by the spill, the depth of the spilled sewage must be determined, which, combined with the area, will lead to the volume spilled.

CONVERSIONS

** To convert inches into feet: Divide the <u>inches</u> by 12.

<u>Example</u>: 27" / 12 = 2.25'

Or Use Chart A

<u>Example</u>: 1 ¾" = ?

1" (0.08') + ¾" (0.06') = <u>0.14'</u>

** One Cubic Foot can contain 7.48 gallons of liquid.

Chart A

Conversion:

Inches	to	Feet
1/8"	=	0.01'
1/4"	=	0.02'
3/8"	=	0.03'
1/2"	=	0.04'
5/8"	=	0.05'
3/4"	=	0.06'
7/8"	=	0.07'
1"	=	0.08'
2"	=	0.17'
3"	=	0.25'
4"	=	0.33'
5"	=	0.42'
6"	=	0.50'
7"	=	0.58'
8"	=	0.67'
9"	=	0.75'
10"	=	0.83'
11"	=	0.92'
12"	=	1.00'

CWEA provides no warranty, expressed or implied, nor assumes any legal liability or responsibility for the accuracy, reliability or completeness of furnished information. While it is our intention to provide training to help you and your agency comply with the SSO WDR, CWEA provides no warranty, expressed or implied, that attending this training and/or using the reference guide and/or database simulation will result in your agency's successful compliance with the SSO WDR. The information provided is not intended to take the place of either the written law or regulations.

Areas and Volumes

Spill Estimation Guide

GEOMETRY

For the purposes of this guide, the unit of measurement will be in feet for formula examples.

Area is two-dimensional - represented in square feet. (Length x Width)

Volume is three-dimensional - represented in cubic feet. (Length x Width x depth) or (Diameter Squared) D^2 x 0.785 x depth.

A Note about Depth

Wet Stain on a Concrete Surface - For a stain on concrete, use 0.0026'. This number is 1/32" converted to feet. For a stain on asphalt use 0.0013' (1/64"). These were determined to be a reasonable depth to use on the respective surfaces through a process of trial and error. A known amount of water (one gallon) was poured onto both asphalt and concrete surfaces. Once the Area was determined as accurately as possible, different depths were used to determine the volume of the wetted footprint until the formula produced a result that (closely) matched the one gallon spilled. 1/32" was the most consistently accurate depth on concrete and 1/64" for asphalt. This process was repeated several times.

Sewage "Ponding" or Contained – Measure actual depth of standing sewage whenever possible. When depth varies, measure several (representative) points, determine the average and use that number in your formula to determine volume.

Area/Volume Formulas

Area is two dimensional and is represented as Square Feet (SQ/FT)

Volume is three dimensional and is represented as Cubic Feet (CU/FT)

One Cubic Foot can hold 7.48 gallons

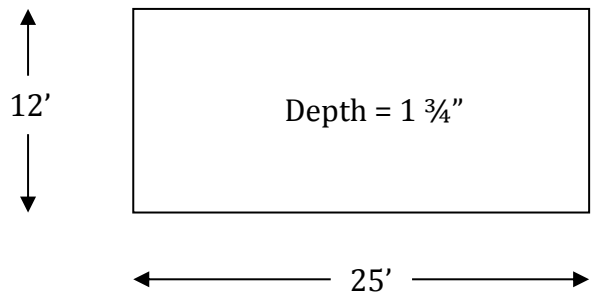
CWEA provides no warranty, expressed or implied, nor assumes any legal liability or responsibility for the accuracy, reliability or completeness of furnished information. While it is our intention to provide training to help you and your agency comply with the SSO WDR, CWEA provides no warranty, expressed or implied, that attending this training and/or using the reference guide and/or database simulation will result in your agency's successful compliance with the SSO WDR. The information provided is not intended to take the place of either the written law or regulations.

Areas and Volumes

Spill Estimation Guide

AREA/VOLUME OF A RECTANGLE OR SQUARE

Formula: **Length x Width x Depth** = Volume in Cubic Feet



Length (25') x Width (12') x Depth (0.14')

25' x 12' x 0.14' = 42 Cubic Feet.

Now the Volume in Cubic Feet is known.

There are 7.48 Gallons in one Cubic Foot

So, 42 Cubic Feet x 7.48 gallons/cubic feet = **<u>314 Gallons</u>**

Chart A

Conversion:

Inches	to	Feet
1/8"	=	0.01'
1/4"	=	0.02'
3/8"	=	0.03'
1/2"	=	0.04'
5/8"	=	0.05'
3/4"	=	0.06'
7/8"	=	0.07'
1"	=	0.08'
2"	=	0.17'
3"	=	0.25'
4"	=	0.33'
5"	=	0.42'
6"	=	0.50'
7"	=	0.58'
8"	=	0.67'
9"	=	0.75'
10"	=	0.83'
11"	=	0.92'
12"	=	1.00'

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Areas and Volumes

Spill Estimation Guide

AREA/VOLUME OF A RIGHT TRIANGLE

Base x Height x 0.5 x Depth = Volume in Cubic Feet

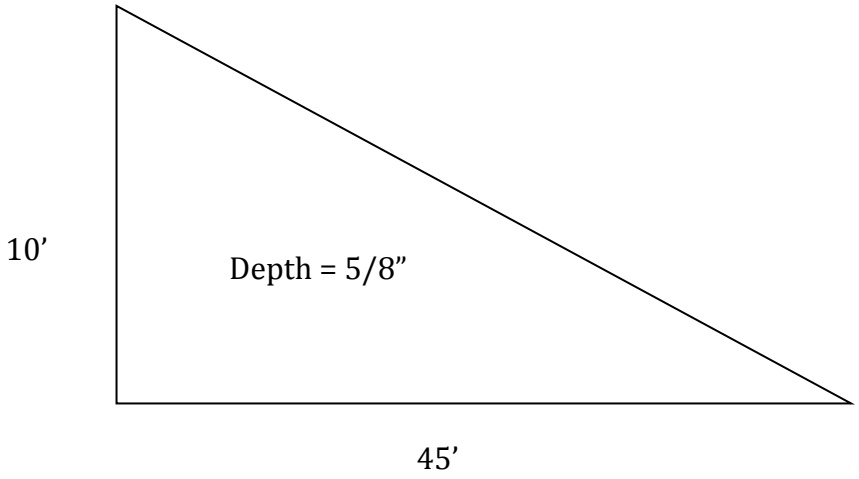


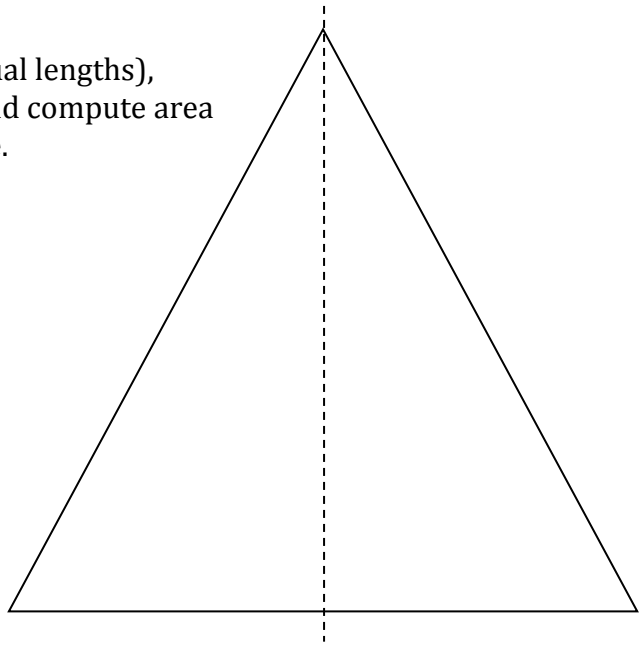
Chart A

Conversion:

Inches	to	Feet
1/8”	=	0.01’
1/4”	=	0.02’
3/8”	=	0.03’
1/2”	=	0.04’
5/8”	=	0.05’
3/4”	=	0.06’
7/8”	=	0.07’
1”	=	0.08’
2”	=	0.17’
3”	=	0.25’
4”	=	0.33’
5”	=	0.42’
6”	=	0.50’
7”	=	0.58’
8”	=	0.67’
9”	=	0.75’
10”	=	0.83’
11”	=	0.92’
12”	=	1.00’

Base (45’) x Height (10’) x 0.5 x Depth (.05’) x 7.48 gallons/cubic foot = **84 gallons**

For Isosceles Triangles (two sides are equal lengths), Break it down into two Right Triangles and compute area as you would for the Right Triangle above.



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Areas and Volumes

Spill Estimation Guide

AREA/VOLUME OF A CIRCLE/CYLINDER

$D^2 \times 0.785 \times d$

Diameter Squared x 0.785 x Depth = Volume in cubic feet.

Diameter = Any straight line segment that passes through the center of a circle.

For our purposes, it is the measurement across the widest part of a circle.

D^2 x 0.785 x depth = Volume in cubic feet

Example:

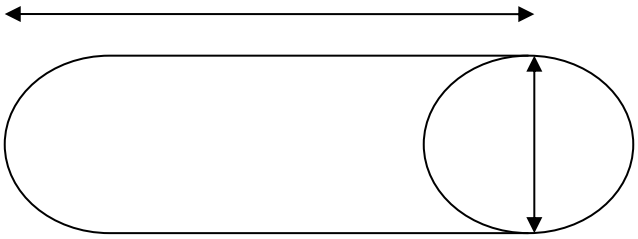
27' x 27' x 0.785 x 0.03 = 17.17 cubic feet

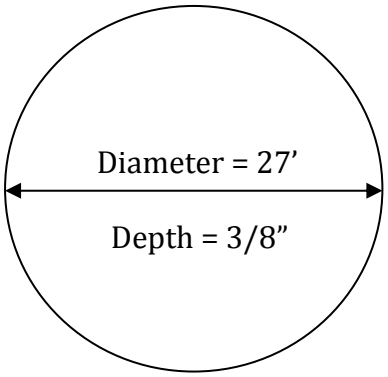
17.17 cubic feet x 7.48 gallons/cubic feet = **<u>128 gallons</u>**

Chart - A

Conversion:
Inches to Feet

1/8"	=	0.01'
1/4"	=	0.02'
3/8"	=	0.03'
1/2"	=	0.04'
5/8"	=	0.05'
3/4"	=	0.06'
7/8"	=	0.07'
1"	=	0.08'
2"	=	0.17'
3"	=	0.25'
4"	=	0.33'
5"	=	0.42'
6"	=	0.50'
7"	=	0.58'
8"	=	0.67'
9"	=	0.75'
10"	=	0.83'
11"	=	0.92'
12"	=	1.00'





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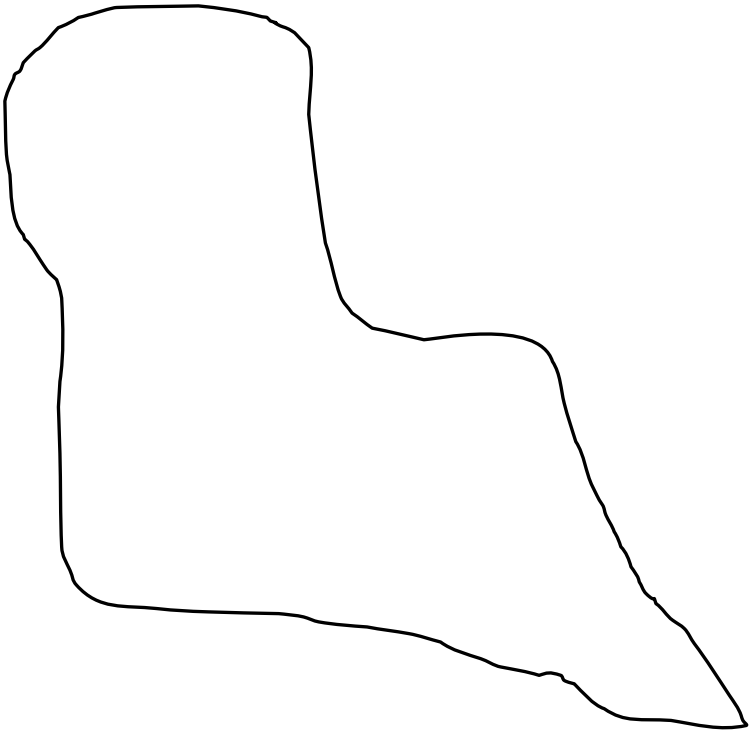
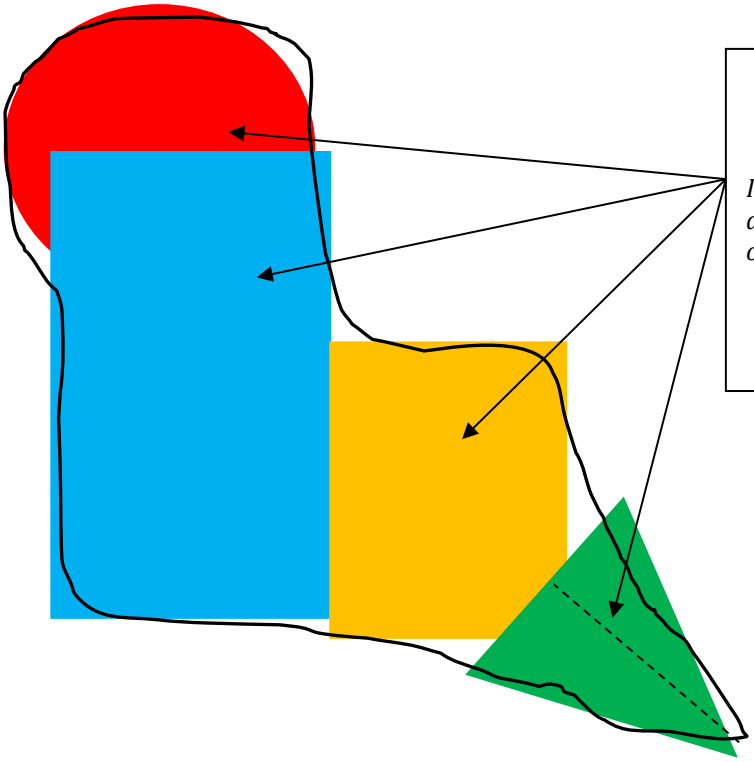
Areas and Volumes

Spill Estimation Guide

Find the geometric shapes within the shape. If this was the shape of your spill, break it down, as best you can, with the shapes we know.





1. Determine the volumes of each shape.

In this example, after the volume of the circle is determined, multiply it by 55% (+/-) so that the overlap area won't be counted twice.

2. Add all the volumes to determine total spill volume.

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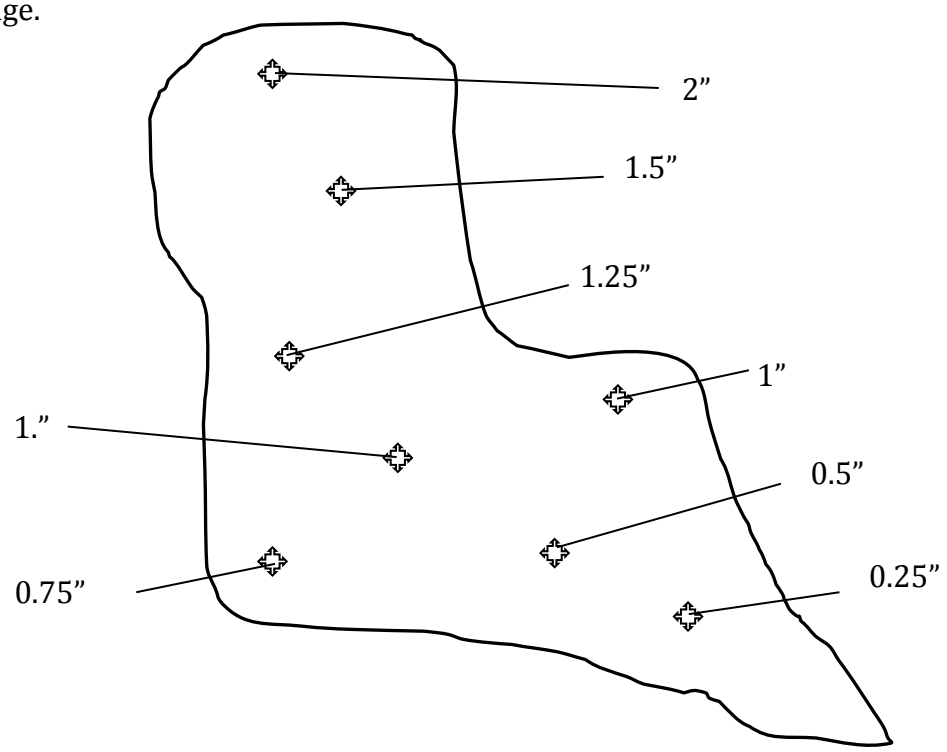
Areas and Volumes

Spill Estimation Guide

If the spill depth is of varying depths, take several measurements at different depths and find the average.



2” + 1.5” + 1.25” + 1” + 1” + 0.75” + 0.5” + 0.25” = 8.25”

8.25” / 8 measurements = 1.03”

Average Depth = 1.03”

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Areas and Volumes

Spill Estimation Guide

Step 1

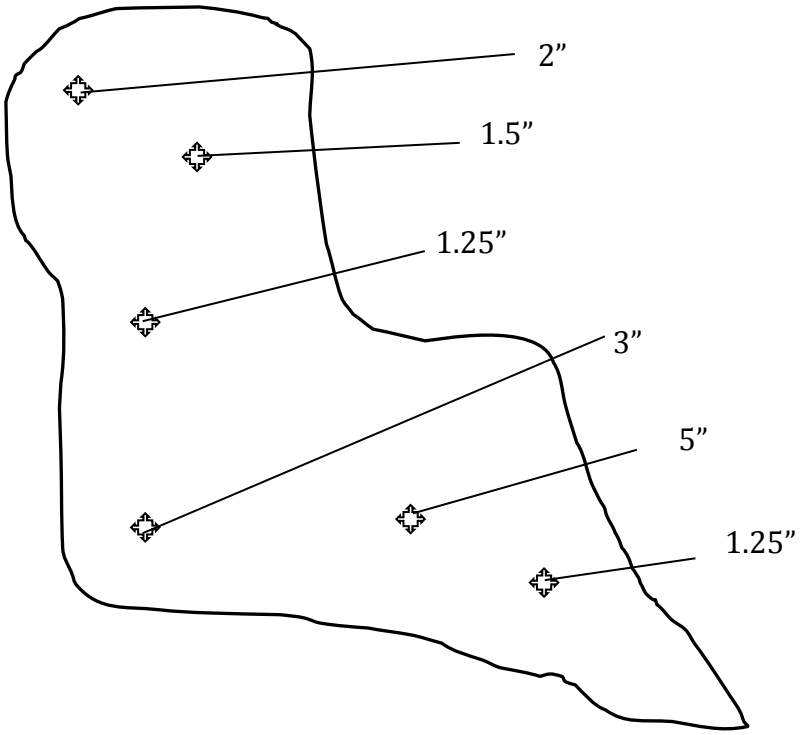
If the spill affects a dry, unimproved area such as a field or dirt parking lot, determine the Area of the wetted ground in the same manner as you would on a hard surface. Using a round-point shovel, dig down into the soil until you find dry soil. Do this in several locations within the wetted area and measure the depth of the wet soil. Average the measurement/thickness of the wet soil and determine the average depth of the wet soil.

Step 2

Take a Test Sample
(See Next Page)

NOTE: This can be used in a (Dry) dirt or grassy area that is not regularly irrigated like a field or a dirt parking lot.

Wet weather would make this method ineffective.



2” + 1.5” + 1.25” + 3” + 5” + 1.25” = <u>14.0”</u>

14.0” / 6 measurements = 2.33”

Average Depth = 2.33” (0.194’)

EXAMPLE:

If the Area of the spill was determined to be 128 Sq/Ft and the average depth of the wet soil is 2.33 inches:

128 Sq/Ft x 0.194’ = 24.83 Cu/Ft

24.83 Cu/Ft x 7.48 Gals/Cu/Ft = 185.74 gallons

185.74 x 18% = <u>33 Gallons</u> (water in soil)

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Areas and Volumes

Spill Estimation Guide

(Test) SAMPLING SOIL FOR WATER CONTENT

Once you have determined the wetted footprint of the spill, you will want to determine the water (sewage) content in the soil.

1. Select an area of dry soil (near the wetted footprint of the spill) to sample.
2. Pour a known amount of water onto the soil and let it soak in for an adequate amount of time. If possible, use a form to keep the water contained to a geometric shape (circle, square, rectangle, etc.).
3. Determine the Area of the wetted footprint.
4. Using a small hand tool, dig down into the soil until dry soil is reached. Measure the depth of the wet soil. Do this in multiple locations and average the measurements.
5. Multiply the Area by the Average Depth of the wet soil to determine the volume of the wet soil.
6. Determine the water content in the soil
    a. Since you started with a known amount, you know how much water is in the soil.
    b. Divide that <u>known amount</u> by the <u>volume determined</u> in step 5 to arrive at the percent of water content in the soil.
    c. Arrive at the water content of the soil (percent)

Example:

1. Place a 2-foot diameter form onto an area of dry soil.
2. Pour one gallon of water into the form and let it soak in for 15 minutes.
3. Pull the form and measure the Area of the wetted soil (it will likely be larger than the form). Let's say 26" diameter.
4. Dig into the soil in 3 locations and measure the depth of the wetted soil.
5. Average the 3 measurements. (Let's say 2.5", 1.5" & 3.75" = 7.75". divide by 3 = <u>2.58"</u> or 0.215')
6. Determine the Area of the Circle (D^2 x 0.785) 2.16' x 2.16' x 0.785 = 3.66 Sq/Ft
7. Multiply the Area by the Average Depth to get the Volume (3.66 x 0.215' = 0.79 Cu/Ft)
8. Multiply 0.79 cubic feet by 7.48 gallons/Cu/ft = 5.9 gallons.
9. Divide 1 Gallon (known Amount) by 5.9 gallons = .17 or 17% is the water content in the soil.
10. Now you have determined that the water content in the soil is 17%. Apply this to your actual spill area.

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Appendix B

SANITARY SEWER OVERFLOW WARNING SIGN

CONTAMINATED WATER

DO NOT DRINK

AGUA

CONTAMINADA

NO LA TOME

For Additional Information Contact: City of Riverside
Regional Water Quality Control Plant 951-351-6280

City of Riverside Public Works Department

UPDATE OF THE INTEGRATED
MASTER PLAN FOR THE WASTEWATER COLLECTION AND TREATMENT FACILITIES

VOL. 9

CHAPTER 4

Additional Special Collection System Studies

Laboratory Compliance Audit

carollo
Engineers...Working Wonders With Water®

City of Riverside Public Works Department

Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities

VOLUME 9: ADDITIONAL SPECIAL COLLECTION SYSTEM STUDIES

CHAPTER 4: LABORATORY COMPLIANCE AUDIT

FINAL | June 2019

City of Riverside Public Works Department
Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities

VOLUME 9: ADDITIONAL SPECIAL COLLECTION SYSTEM STUDIES

CHAPTER 4: LABORATORY COMPLIANCE AUDIT

Carollo Project No. 10495A00

Digitally signed by Graham J.G. Juby
Contact Info: Carollo Engineers, Inc.
Date: 2019.08.27 08:47:46-07'00'

REGISTERED PROFESSIONAL ENGINEER
GRAHAM J. G. JUBY
No. 67217
CIVIL
STATE OF CALIFORNIA

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Chapter 4

LABORATORY COMPLIANCE AUDIT

4.1 Purpose

As part of the River Watch Agreement task items included in Volume 9 of the update to the Master Plan, Carollo contracted William Ray Consulting, LLC. to perform an assessment of the RWQCP Laboratory analytical operating procedures and associated quality management system. The assessment included a documentation review as well as an onsite visit consisting of further document review, observation of staff performing analytical procedures, and observation of equipment operation.

4.1.1 Summary of Findings

The laboratory is well organized and conducts its activities efficiently and in accordance to its own operating procedures. Staff appear knowledgeable about procedures and quality system requirements. The assessor observed staff's response when a method failed its quality system criteria and was impressed with staff's professionalism. A full copy of the assessor report is included in Appendix 4A. A summary of observations are presented in the following:

1. Several documents require minor clarifications in order to make them in agreement with approved method texts or regulatory requirements.
2. Although the laboratory takes every effort to begin sample analyses as soon as possible, the time difference between sample collection and the start of analysis may exceed the allowed time of 15 minutes for grab samples as stated in 40CFR Part 136.3, Table II, note 2. A copy of this method text is included in Appendix 4A.
3. Upon advisement, the laboratory noted that the addition of base in their cyanide sample caused an increase in cyanide concentration. This phenomenon has been noted elsewhere and the laboratory was advised of the availability of an Alternate Test Procedure approval for alternate preservation and hold times from 40CFR Part 136.3,(e). A copy of this method text is included in Appendix 4A.

4.1.2 Recommendations

All analytical Standard Operations procedures should be revised to correct any missing procedures or disagreements with approved method references. The RWQCP Lab is to continue its effort to re-compute all MDLs via the procedure found in 40CFR part 136, included in Appendix 4A.

Appendix 4A

LABORATORY COMPLIANCE AUDIT REPORT

WILLIAM RAY CONSULTING, LLC

March 21, 2019

Graham Juby
Carollo Engineers, Inc.
3159 Bristol St., Suite 500
Costa Mesa, CA 92626

Report on the Onsite Assessment of the Riverside City Waste Treatment Plant Laboratory

The attached report covers the onsite assessment of the Riverside City Waste Treatment Plant Laboratory conducted on February 26 thru February 28, 2019.

Sincerely yours,

William Ray
Owner President

Training our specialty

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WILLIAM RAY CONSULTING, LLC

An onsite assessment of the City laboratory was conducted at the request of Carollo Engineers, Inc. The assessment was to determine the state of the analytical operating procedures and associated quality management system. The assessment included a document review in advance and an onsite visit consisting of further document review, observation of staff performing analytical procedures, and observation of equipment operation. Reports of findings are attached in the appendices.

OVERALL IMPRESSION

The laboratory is well organized and conducts its activities efficiently and in accordance to its own operating procedures. Staff appear knowledgeable about procedures and quality system requirements. The assessor observed staff's response when a method failed its quality system criteria and was impressed with staff's professionalism.

Overall Assessment Findings

The assessor did find several instances where documents were not in agreement with approved method texts or regulatory requirements, however the findings are more about clarification rather than outright failure to comply.

Although the laboratory takes every effort to begin sample analyses as soon as possible, the time difference between collection and the start of analysis may exceed the allowed time of 15 minutes for grab samples as stated in 40CFR Part 136.3, Table II, note 2 (copy in Appendix B).

Upon advisement, the laboratory noted that the addition of base in their cyanide sample caused an increase in cyanide concentration. This phenomenon has been noted elsewhere and the laboratory was advised of the availability of an Alternate Test Procedure approval for alternate preservation and hold times from 40CFR Part 136.3,(e) (copy in Appendix B).

Specific Findings

Appendix A provides the findings from both the document review and the onsite assessment. The findings are ordered based on analytical method in the City's Quality Assurance Plan.

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WILLIAM RAY CONSULTING, LLC

Recommendations

The laboratory is to revise all analytical Standard Operations procedures to correct any missing procedures or disagreements with approved method references. The laboratory is to continue its effort to recompute all Method Detection Limits (MDLs) via the procedure found in 40CFR part 136, Appendix B.

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APPENDIX A

Review and findings as a result of the assessment of the Riverside Regional Water Quality Control Plant (RWQCP) Laboratory. Review consisted of both a document review and onsite observations.

Review of Laboratory Quality Assurance Plan

The provided Laboratory Quality Assurance Plan states its formatting is guided by the 2016 TNI requirements as found in the document *Management and Technical Requirements for Laboratories Performing Environmental Analysis*, Rev. 2.1, September 1, 2016. Assessing against TNI standards is not part of the Scope of Work, however a brief summary of findings is provided below.

<u>Assessment against the requirements of CCR 64801, et. al.</u>

The Laboratory is determined in compliance with CCR section 64815.(a). The section requires the laboratory to create a quality assurance program and a quality assurance program manual. The Laboratory provided a quality assurance program manual (Manual). Conformance to the contents was assessed during an onsite evaluation conducted February 26 through 28, 2019.

CCR section 64815.(b) provides the topics to be discussed in the Manual. They are:

- laboratory organization and personnel responsibilities;
- quality assurance objectives for measurement data;
- sampling procedures (when the laboratory performs the sampling);
- custody, handling, and disposal of samples;
- calibration procedures and frequency;
- analytical procedures;
- acquisition and reduction, validation and reporting of data;
- internal quality control checks;
- performance and system audits;
- preventive maintenance;
- assessment of precision and accuracy;
- corrective action; and
- quality assurance reports.

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The document contains those required topics.

CCR section 64815.(b) also provides for the contents of the quality assurance program by stating that it must include at a minimum those quality assurance and quality control requirements found in the test methods. Review against the standard was made of the Manual, analytical SOPs, and via the onsite assessment. Findings are as follows.

Findings related to the Manual

Section 4.1.4

The section states that bacterial bottles will contain 1 to 2 tablets of sodium bisulfite at 0.008%. *Standard Methods*… section 9060A-2008 states that the concentration is based on sodium thiosulfate not sodium bisulfite. 40CFR Part 136.3, Table II also states sodium thiosulfate to 0.008%. Both citations do not prohibit the use of other de-chlorination agents, but they must be added at a rate equivalent to 0.008% sodium thiosulfate.

This statement is also in disagreement with statements regarding sample collection in analytical SOP for multiple tube fermentation where sodium thiosulfate is cited. During the onsite assessment, the laboratory felt the tablet contents were thiosulfate and the entry may be in error. The laboratory will check with the vendor to determine the contents and correct any reference to the dechlorination agent.

Action: Laboratory noted that the citation of bisulfite instead of thiosulfate was a typographical error and demonstrated that the provided tablets were sodium thiosulfate as noted in the vendor's literature.

Section 4.1.5

The section states that routine samples are analyzed the same day, however it does not state that samples are properly chilled or chemically preserved if analyses are not started within 15 minutes of collection or end of the composite period. 40CFR part 136.3, Table II, Note 2 states that preservation is to begin within 15 minutes of collection for grabs. Composite samples that are collected unpreserved are to be kept at $\leq 6^{o}C$, and must be split into appropriate containers with preservatives within 15 minutes. The entire text of Note 2 is attached in Appendix B.

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Section 4.3.4.2

The section states approved method references are from 40CFR Part 136.3 as revised on July 1, 2015. This is not the currently approved methods as required by US EPA, the Surface Water and Enclosed Bays and Estuaries statewide plan, or in the permit issued to the City of Riverside. The most current approved methods are a result of a Methods Update Rule approved in 2017 and effective in September 27, 2017.
The laboratory possessed copies of Federal Register notices containing Method Update Rules. A copy of the current contents of 40CFR Part 136 has been provided to the laboratory.

The laboratory noted, and the assessor agreed that the reason for this was a result of the Environmental Laboratory Accreditation Program's failure to adopt currently approved methods in their Fields of Testing tables.

Section 6.10, Table C

The second item states the nature of the weights designating them as Class 2. Per ANSI/ASTM, Class 2 only goes to 0.001 grams (1 milligram) and suitable for high precision top loader balances. Class 1 goes to 0.0001 grams (0.1 milligram) and suitable for high precision analytical balances. Although nothing is stated in methods associated with gravimetric methods, *Standard Methods*…, 9020B-2011 4.b states working weights must be checked against Class 1 weights (or NIST Class S). The laboratory may choose to skip using working weights, but must substitute for the proper weight class.
During the onsite assessment, the laboratory could not confirm but believes that it has a single Class 2 weight and two Class 1 weights. The laboratory has confirmed that it will purchase a set of ASTM Class 1 or NIST Class S1 weights appropriate for calibrating the balances.

<u>Action:</u> During the onsite assessment, the issue of what class the balance weights was not completely resolved as the lab only had the weights themselves and the paperwork was not quite clear. The laboratory has confirmed that it will purchase new weights of the proper class.

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Section 8.1, Table E

The described procedure for the MDL is not in conformance with current required practices found in 40CFR Part 136, Appendix B. The procedure calls for analysis over three days minimum; data collection throughout the year; and an annual verification process.
The laboratory provided a copy of the current Appendix B procedure and stated that they were the process of updating their procedures. The laboratory will modify its references and practices to reflect the current Appendix B procedure.

Section 8.1.4

EPA has stated that any requirement in regulation supersedes those in the analytical method, therefore the provision in EPA method 300.0 for semi-annual verification is superseded by the annual verification in the Appendix B procedure. The full text of 40CFR Part 136.3.(a) with the stipulation for the use of the Appendix B procedure is attached in Appendix B of this report.

Section 8.1.18

It is stated that autoclave performance is checked with sterile indicating tape. *Standard Methods*… 9020B-2005 states that indicating tape is used only to identify items that have been through the sterilization process. Autoclave performance is checked by temperature readings and the use of bio-indicator spore strips, suspensions, or capsules.

The laboratory does use a max reading thermometer and spore tests. The use of tape will be restricted to a simple indicator that confirms the item(s) have been run through the autoclave.

<u>Notes and Observations</u>

The document states it is to comply with the 2016 TNI Standards. There is no requirement in current regulations stipulating compliance with the Standard. The laboratory chose to do so, and this additional assessment is against those Standards. The Manual is not in conformance with the requirements found in V1M2 4.2.8.3 and 4.2.8.4 as there are several missing elements and policies/procedures.

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The analytical SOPs do not contain all the required elements found in V1M2 4.2.8.5.(f)

Batch definition in X states it is for 10 regulatory samples. Normally a batch is defined as all samples not just regulatory samples.

The laboratory does wish to incorporate TNI standards and recognizes that an assessment is premature. In discussing, the definition of a batch will be reviewed because several methods do not analyze any regulatory samples.

ANALYTICAL SOPs

Alkalinity by SM 2320B

The method was not reviewed during the onsite assessment. The following findings are based on the review of the SOP against the approved reference method.

Section 4.3

40CFR Part 136 Appendix B states that most titrimetric methods are exempt from the necessity of determining an MDL.

Section 4.4

Standard Methods…2020B-2011 states a method blank for alkalinity is not required.

Section 7.3

The described calibration procedure for the pH described in 7.2. Per section 7.2 the buffers would be 4 and 7, not 4 and 10. It should be noted that the focus is on the endpoint at 4.3 as opposed to the measurement of sample pH so the use of a pH 10 buffer is not necessary except if phenolphthalein endpoint determinations per the manual method are desired.

Missing is the requirement in *Standard Methods*…202B-2011 that all titrants be checked monthly and either discarded or recalibrated if the check fails. The reference does not state what constitutes a failure.

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Ammonia by EPA method 350.1

The method was reviewed during the onsite assessment, and there were no findings. The following findings are from review of the SOP.

Section 9.2

Sample preservation cited in this section is contrary to both the base method requirements and 40CFR Part 136.3, Table II, Note 2. Samples must be acidified with acid within 15 minutes of collection not 24 hours as stated in the SOP. The method makes no mention of filtering the sample, but if not acidified then ammonia loss is possible.

Distillation

EPA method 350.1 provides a distillation step in section 11.1 thru 11.3. Although 40CFR Part 136.3, Table IB, Note 6 (provided in full below) allows skipping the distillation process there is some concern that the use of filtration as a means of turbidity removal is causing a loss of ammonia, especially with no sample acidification.

Addendum A

Section 8.0

The addendum sample collection procedures conflict with section 9.2 of the method and stipulate distillation and do not describe filtering the sample.

Cyanide by OIA-1677-09

The method was not reviewed during the onsite assessment. The following findings are based on the review of the SOP against the approved reference method.

Note that the ASTM method mentioned is not an approved method for cyanide by this technique.

Section 3.4

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There is no mention of filtering samples in the base method and it is unclear why that is necessary. Cyanide, like ammonia, should not be filtered unless the sample is properly preserved.

Section 9.0

There is no mention of preserving samples with sodium hydroxide to pH > 10 as per 40CFR Part 136.3, Table II.

Anions by EPA method 300.0

This method was reviewed during the onsite assessment. Findings from the review of the SOP are discussed first followed by the findings from the onsite assessment.

Sections 6.5 and 7.1

The section states that there are two reasons for recalibrating between monthly calibrations: performance checks outside 10% and after major work is performed on instrument. This does not include the provision from EPA 300.0, section 10.4 that it be checked after changing eluent.

Sections 6.5 and 7.1

There is no mention of a blank standard in the calibration solutions or in the calibration method as required by EPA method 300.0, section 10.2.

Section 8.0

There is no mention of the determination of the Linear Calibration Range (LCR) as required by EPA method 300.0, section 9.2.2. The LCR is to be determined initially and verified every 6 months.

During the onsite assessment the laboratory stated they had not done this since their calibration curve covered all expected sample concentrations and was linear over the range. It was pointed out that the method did not allow an exemption and stated the requirement as a “shall”.

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Onsite findings

The laboratory filters some samples as they contain significant amount of suspended matter enough to clog the 0.45 micron in-line filter on the device. There is nothing in the reference procedure, EPA method 300.0 that prevents this, but the procedure followed is not stated in the SOP.

The laboratory needs to adjust the SOP to provide a list of equipment and materials needed for sample pretreatment. Specific to that would be the filter type used so that proper filters can be purchased regardless of manufacturer or vendor. The SOP then needs the addition of the pretreatment process including what determines it is necessary, or what samples it is routinely applied to.

Autoclave SOP

The following findings are from the review of the SOP. A review of media preparation logs was conducted during the onsite assessment with no findings generated.

Section 8.2

See the finding above for the Manual, section 8.1.18

Chlorine Residual by Colorimeter

The method was not reviewed during the onsite assessment. The following findings are based on the review of the SOP against the approved reference method.

Title

There is no EPA method 8167. The method is a Hach method and can be stated as equivalent to *Standard Methods*…4500-Cl G.

Missing

Procedure for the production of chlorine-demand free water.

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Chemical Oxygen Demand

The method was review during the onsite assessment with no findings generated. The following findings are from review of the SOP.

Section 8.3

The section establishes the frequency of the LCS. It disagrees with the batch definition as that definition does not state the frequency as tied to the range.

Section 8.4

The section refers to the frequency of analysis of an MS and MSD. The frequency is listed as an "or" clause but does not state whether per batch or per 10 samples at each range there is question as to which the frequency for MS/MSDs is.

Section 8.5

The section establishes the criterion for successfully performing a Demonstration of Capability. It requires analysis of 4 replicates for each range or a total of 8 results. The criterion does not state whether that is for all 8 or for each set of 4 samples.

Section 9.2

As noted for other methods, either the sample is preserved within 15 minutes or analyzed within 15 minutes to comply with the provisions of 40CFR part 136.3, Table II

Bacterial media preparation SOP

The method was not reviewed during the onsite assessment. The following findings are based on the review of the SOP against the approved reference method.

Section 3.1

Reagent grade water used in the preparation of media does not need to be checked for herbicides.

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Free Cyanide by Segmented Flow

The method was not reviewed during the onsite assessment. The following findings are based on the review of the SOP against the approved reference method.

Overall

The method cites EPA method 335.4. That method is not approved for free cyanide in 40CFR Part 136.3, Table IB. The EPA method listed is for total cyanide only. The approved methods are ASTM D7237-10, D4282-02 and OIA-1677-09.

EPA method 200.7

The method was reviewed during the onsite assessment via walk through with the analyst. No findings were generated from the review. The laboratory is requested to seek purchase of and use of liquid argon in Dewers. Issues can be created if argon is not continually flowing into the device. Tanked argon is too quickly consumed, and only liquid argon will suffice.

General

Method 200.7 requires in section 9.2.2 that a Linear Dynamic Range (LDR) be established for each wavelength. The SOP defines the term but does not determine LDRs as required.

Section 11.2

The ability to measure turbidity of less than 1 NTU is only available for drinking water analyses. The SOP needs to state that fact.

MDL Determination SOP

The method was not reviewed during the onsite assessment, but the subject was discussed with the staff. See above for discussion on the conversation. The following findings are based on the review of the SOP against the approved reference method.

40CFR Part 136, Appendix B states that it is not applicable to all tests. Although specific tests are cited, there are some more generically stated. The exemptions not clearly

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stated are most titrimetric tests and those where a reliable sample cannot be made. The procedure, although exempting solids tests, does provide an alternate procedure using method blank analyses only. The SOP needs to state which laboratory procedures are included in these generic exemptions.

The procedure is not generally applicable to drinking water analyses and the SOP should state which ones. For example, lead and copper under the Lead and Copper rule require the Appendix B procedure but other metals do not.

Multiple Tube Fermentation

The method was reviewed during the onsite assessment. Findings from the review of the SOP are below with the onsite assessment findings following.

Sections 8.7 and 10.3

The completed test is not required per 40CFR Part 136.3, Table IA Note 12 (see appendix)

Onsite findings

When describing the process, the analyst stated that it is "duplicate day" hence the need to set up a duplicate set of tubes. It is noted that the procedure lacks reference to duplicate analysis although the base method does require it on 10% of samples. The laboratory is to add discussion in the SOP as to when a duplicate sample is to be collected and analyzed. In the quality assurance section, the laboratory is to include the process for computing acceptance criterion as described in *standard Methods*… 9020B. section 8.

Oil and Grease

The method was reviewed during the onsite assessment with no findings. The following findings are from review of the SOP.

Sections 3.3 and 5.2.1 disagree as to the washing cycle intensity.

Sections 6.5 and 6.6

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EPA method 1664B establishes the use of hexadecane/steric acid solution to form all standards and the Precision and Recovery (PAR) solution. It is unclear if the list materials in 6.5 and 6.6 contain either or both substances and the ratio of each.

Section 9.1.1

The batch definition, although used in other SOPs conflicts with the definition found in section 18.2.2 of the method.

pH

The method was not reviewed during the onsite assessment. The following findings are based on the review of the SOP against the approved reference method.

The EPA method is no longer approved. However, since the calibration procedure found in *Standard Methods*… 4500 H^+ is out-of-date, a better reference is EPA method 150.2.

Section 7.3

As noted elsewhere, the calibration procedure is contrary to the method requirements that calibration points be no more than 3 pH units apart.

Total Dissolved Solids

The method was not reviewed during the onsite assessment. The following findings are based on the review of the SOP against the approved reference method.

Section 4.5

As noted above under the MDL SOP, solids are exempt from the need to determine an MDL unless the process of using methods blanks only is adopted.

Section 9.3

The section refers to the amount of residue on the filter, however, the requirement in *Standard Methods*… 2540C is about the residue in the evaporation dish not the filter. That would only be if this were a combined method covering both suspended and dissolved solids determination.

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Total and Fixed/Volatile Solids on Semi-solids

The method was not reviewed during the onsite assessment. The following findings are based on the review of the SOP against the approved reference method.

Section 4.4

As noted for other solids measurements, no MDL is required.

Total and Fixed/Volatile Suspended Solids

The method was reviewed during the onsite assessment. Findings from the review of the SOP are below with findings from the onsite assessment following.

General

Standard Methods… section 3 states that a blank filter must be run through the ignition phase and weight loss may be an indication of unsuitability of the filter.

Section 4.6

As noted for other solids measurements, no MDL is required.

Onsite findings

It was unclear if the analyst rinsed the filter after sample filtration using 3 – 10 mL portions of reagent grade water.

Turbidity

The method was not reviewed during the onsite assessment. The following findings are based on the review of the SOP against the approved reference method.

Although not specifically listed, turbidity can be considered a procedure exempt from the MDL procedure.

Section 6.1

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40CFR Part 136.3, Table IB, Note 53 states that "Styrene divinyl benzene beads (e.g., AMCO-AEPA-1 or equivalent) and stabilized Formazin (e.g., Hach StablCal™ or equivalent) are acceptable substitutes for Formazin." Gel-Ex standards can only be a replacement for Formazin if they are equivalent to the above.

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APPENDIX B

40CFR PART 136.3.(a) Identification of test procedures.

Parameters or pollutants, for which methods are approved, are listed together with test procedure descriptions and references in Tables IA, IB, IC, ID, IE, IF, IG, and IH of this section. The methods listed in Tables IA, IB, IC, ID, IE, IF, IG, and IH are incorporated by reference, see paragraph (b) of this section, with the exception of EPA Methods 200.7, 601-613, 624.1, 625.1, 1613, 1624, and 1625. The full texts of Methods 601-613, 624.1, 625.1, 1613, 1624, and 1625 are printed in appendix A of this part, and the full text of Method 200.7 is printed in appendix C of this part. The full text for determining the method detection limit when using the test procedures is given in appendix B of this part. In the event of a conflict between the reporting requirements of 40 CFR parts 122 and 125 and any reporting requirements associated with the methods listed in these tables, the provisions of 40 CFR parts 122 and 125 are controlling and will determine a permittee's reporting requirements. The full texts of the referenced test procedures are incorporated by reference into Tables IA, IB, IC, ID, IE, IF, IG, and IH. The year after the method number indicates the latest editorial change of the method. The discharge parameter values for which reports are required must be determined by one of the standard analytical test procedures incorporated by reference and described in Tables IA, IB, IC, ID, IE, IF, IG, and IH or by any alternate test procedure which has been approved by the Administrator under the provisions of paragraph (d) of this section and §§136.4 and 136.5. Under certain circumstances (paragraph (c) of this section, in §136.5(a) through (d) or 40 CFR 401.13) other additional or alternate test procedures may be used.

40CFR PART 136.3.(e)

Sample preservation procedures, container materials, and maximum allowable holding times for parameters are cited in Tables IA, IB, IC, ID, IE, IF, IG, and IH are prescribed in Table II. Information in the table takes precedence over information in specific methods or elsewhere. Any person may apply for a change from the prescribed preservation techniques, container materials, and maximum holding times applicable to samples taken from a specific discharge. Applications for such limited use changes may be made by letters to the Regional Alternative Test Procedure (ATP) Program Coordinator or the permitting authority in the Region in which the discharge will occur. Sufficient data should be provided to assure such changes in sample preservation, containers or

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holding times do not adversely affect the integrity of the sample. The Regional ATP Coordinator or permitting authority will review the application and then notify the applicant and the appropriate State agency of approval or rejection of the use of the alternate test procedure. A decision to approve or deny any request on deviations from the prescribed Table II requirements will be made within 90 days of receipt of the application by the Regional Administrator. An analyst may not modify any sample preservation and/or holding time requirements of an approved method unless the requirements of this section are met.

40CFR PART 136.3 TABLE II, note 2

Except where noted in this Table II and the method for the parameter, preserve each grab sample within 15 minutes of collection. For a composite sample collected with an automated sample (e.g., using a 24-hour composite sample; see 40 CFR 122.21(g)(7)(i) or 40 CFR part 403, appendix E), refrigerate the sample at ≤6 °C during collection unless specified otherwise in this Table II or in the method(s). For a composite sample to be split into separate aliquots for preservation and/or analysis, maintain the sample at ≤6 °C, unless specified otherwise in this Table II or in the method(s), until collection, splitting, and preservation is completed. Add the preservative to the sample container prior to sample collection when the preservative will not compromise the integrity of a grab sample, a composite sample, or aliquot split from a composite sample within 15 minutes of collection. If a composite measurement is required but a composite sample would compromise sample integrity, individual grab samples must be collected at prescribed time intervals (e.g., 4 samples over the course of a day, at 6-hour intervals). Grab samples must be analyzed separately and the concentrations averaged. Alternatively, grab samples may be collected in the field and composited in the laboratory if the compositing procedure produces results equivalent to results produced by arithmetic averaging of results of analysis of individual grab samples. For examples of laboratory compositing procedures, see EPA Method 1664 Rev. A (oil and grease) and the procedures at 40 CFR 141.24(f)(14)(iv) and (v) (volatile organics).

40CFR PART 136.3, TABLE IB, note 6

Manual distillation is not required if comparability data on representative effluent samples are on file to show that this preliminary distillation step is not necessary: However, manual distillation will be required to resolve any controversies. In general, the analytical method should be consulted regarding the need for distillation. If the method is not clear, the laboratory may compare a minimum of 9 different sample

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matrices to evaluate the need for distillation. For each matrix, a matrix spike and matrix spike duplicate are analyzed both with and without the distillation step. (A total of 36 samples, assuming 9 matrices). If results are comparable, the laboratory may dispense with the distillation step for future analysis. Comparable is defined as <20% RPD for all tested matrices). Alternatively the two populations of spike recovery percentages may be compared using a recognized statistical test.

40CFR PART 136.3, TABLE IA, note 12

The multiple-tube fermentation test is used in 9221B.2-2006. Lactose broth may be used in lieu of lauryl tryptose broth (LTB), if at least 25 parallel tests are conducted between this broth and LTB using the water samples normally tested, and this comparison demonstrates that the false-positive rate and false-negative rate for total coliform using lactose broth is less than 10 percent. No requirement exists to run the completed phase on 10 percent of all total coliform-positive tubes on a seasonal basis.

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City of Riverside Public Works Department

UPDATE OF THE INTEGRATED
MASTER PLAN FOR THE WASTEWATER COLLECTION AND TREATMENT FACILITIES

VOL. 9

CHAPTER 5

Additional Special Collection System Studies

Chemical Root Control SOP

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City of Riverside Public Works Department

Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities

VOLUME 9: ADDITIONAL SPECIAL COLLECTION SYSTEM STUDIES

CHAPTER 5: CHEMICAL ROOT CONTROL SOP

FINAL | June 2019

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Carollo Project No. 10495A00

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STATE OF CALIFORNIA

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Chapter 5

CHEMICAL ROOT CONTROL SOP

5.1 Purpose

Part of the River Watch Agreement task items included details regarding the implementation and SOP's for the application of chemicals to control root incursion into the pipelines. As roots invade pipelines and manholes, they cause cracks and fissures in the collection system leading to sanitary sewer contamination incidents. The use of chemicals to control root ingress is required to minimize damage. The purpose of this Chapter is to summarize the development of the chemical root control SOP's.

5.2 Background

The scope requires that the chemical root control SOP for the sewer system comply with the chemical manufacturer and Cal-OSHA. Section 2.5 of the River Watch Agreement requirements were used to help develop the SOP as summarized below:

- City shall use chemicals approved and/or recommended by the EPA or RWQCB.
- Chemical application must be consistent with City's written SOP, and comply with the recommendation of the manufacturer of the chemical and as required by Cal-OSHA.
- The development of methods for chemical application that reduce the likelihood that these chemicals will escape the collection system, and keep public informed of chemical use.
  - Use chemical root control agents with breakdown products non-toxic to aquatic plants or animals.
  - Develop and implement best management practices to preclude the unintended escape of the root control agent from the sewer line.
  - Recordkeeping that includes identifying the PACP rating in the section being treated if known, a map identifying locations where application occurs, the chemicals used, the material safety sheet, and the amount applied.
  - No application of a root control agent to a sewer line that has a known PACP rating of four or five.
  - Do not knowingly apply a root control agent in a location where groundwater can be contaminated via infiltration or exfiltration.
  - Verify through CCTV inspection that the root control agent effectively removed the identified roots before expiration of the chemical agent warranty.
- The City shall post on its website a map showing where a root control agent may be used throughout the sewer system and provide a contact number for the City to respond to questions.

5.3 Development of SOP

The Chemical Root Control SOP and reviewed by 1st Source Health and Safety Training Services to ensure compliance with Cal-OSHA requirements. The City met with a representative from RootX for training on proper application of their chemical root control products. The City indicated that they plan to use RootX products exclusively. The application procedures transcribed by the City were used in the development of the SOPs. Procedures were established using the City's existing SOP format and are included in Appendices 5A through 5D. Each appendix provides the SOP for different methods of application.

Appendix 5A

CHEMICAL ROOT CONTROL SOP: DIRECT POUR APPLICATION METHOD ROOTX

Number: IX-001

Public Works Department
Wastewater Division

EFFECTIVE DATE: **MONTH/YEAR**
REVIEW DATE: **MONTH/YEAR**
PREPARED BY: **RWQCP Management**

APPROVED:

_____
Deputy Public Works Director, Wastewater

City of Riverside
RWQCP Administrative Directive

SUBJECT: **CHEMICAL ROOT CONTROL STANDARD OPERATING PROCEDURE: DIRECT POUR METHOD - RootX**

PURPOSE:

Chemically eliminate and retard root growth in the sanitary sewer system.

Goal:

To locate and remove blockages caused by roots. Reduce infiltration caused by roots. Perform regularly scheduled root control of known trouble spots. Restore pipe capacity to a minimum of 95% of the original carrying capacity. The following steps outline the minimum expectations for Wastewater Collections Staff to effectively use chemical root control.

DEFINITIONS:

Unit - Combination or Hydro only sewer cleaning trucks.
Crew Leader - Any individual serving in the capacity of Wastewater Collections System Crew Leader.
Senior - The individual serving in the capacity of Senior Wastewater Collection System Technician.
Staff - Any individuals working within the Wastewater Collections Section and assigned to lead, perform, or support sewer line cleaning activities.
Supervisor - The individual serving in the capacity of Wastewater Mechanical Supervisor – Collections.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Working safely is the number one goal for all Wastewater Division employees. Employees are responsible for ensuring they and their coworkers employ and understand proper PPE and safe work practices. Below is the minimum safety equipment staff are expected to have readily available to perform sewer line cleaning.

- Hard hat.
- Class III ANSI safety reflective vest.
- Leather gloves(1)(2).
- Safety toe boots (1).
- Gauntlet-length waterproof gloves, preferably puncture and abrasion resistant.
- Rubber or synthetic material boots.
- Safety goggles (not safety glasses).
- Waterproof apron.
- Calibrated gas detector.
- NIOSH-approved TC-23C cartridge respirators.
- Supplied air respirators must be worn when working in confined spaces.
- Outer protective clothing worn over regular clothing - disposable protective clothing or cloth coveralls.
- Hearing protection.
- City issued uniform (long pants & long sleeved shirts).
- Traffic cones (9 minimum).
- First Aid Kit.

(1) Only worn during jobsite setup and takedown, not to be worn during preparation or application of chemical root control.

(2) Cloth coveralls must be laundered before being reused. The law requires that clean coveralls be used at the beginning of each work period.

REQUIRED FORMS:

- Work Order.
- Material Safety Sheet.
- Proof of Certification of Pesticide Applicators.
- Emergency Contact List.
- Pre-Trip Inspection Form.
- Injury/Damage Report Form.

PERSONNEL, TOOLS, AND EQUIPMENT:

- Minimum 2-person crew [1].
- Root chemical control [2].
- Chemical mixing equipment.
- Chemical application equipment [3].
- Vehicle Condition Report booklet.
- Sewer and storm drain map book.
- Spill containment supplies.
- Hydro hose rollers/skids plates.
- Manhole sealant/tape/cord.
- Empty Buckets and debris baskets.
- Fully charged City issued cell phone.
- Sledgehammer.
- Debris hook and catcher.
- Disinfectant sprayer (FULL).
- Proper nozzles and skids.
- Tiger tails with rope.
- Mirror and spotlight.
- Poles and attachments.
- Measuring wheel.
- Corks.
- Duct tape.
- Push broom.
- Manhole hook.
- Square and round point shovels.

(1) May require more with Supervisor approval.
(2) Use only chemical root control agents with breakdown products non-toxic to aquatic plants or animals.
(3) Specified by manufacture.

PERFORMANCE STANDARD:

To perform sewer line cleaning competently and without supervision, staff must be able to:

- Certified Pesticides Applicator.
- Understand written and verbal directions.
- Operate any Combination or Hydro Unit in the Section's fleet.
- Read and comprehend City of Riverside sewer and storm drain map books and work orders.
- Use hand radio, laptop computer, and city issued cell phone.
- Setup effective traffic control.
- Know and perform sewer line cleaning operations and techniques.
- Know and use hand signals (line cleaning and traffic control).
- Select and use proper PPE.
- Demonstrate proficiency using Oracle UWAM including an ability to lookup, view, and verify details of sewer system assets.

APPLICATION PROCEDURE

Prior to performing sewer line cleaning and before leaving the Water Quality Control Plant, project preparation and a pre-trip inspection of the unit and its components shall be completed along with a Vehicle Condition Report. The Vehicle Condition Report shall accurately describe the findings of the

unit inspection. Staff shall ensure their assigned unit is capable of cleaning the lines scheduled per the following:

Unit	Pipe Diameter		
	6" – 10"	10"-15"	15" +
E-386	X	X	X
E-372	X	X	X
E-314	X	X	X
E-327	X	X	
E-444	X	X	
Mongoose	X		

A. PROJECT PREPARATION:

NOTE: It is recommended that project preparation begins no less than three (3) days prior of planned application. The application procedures will be followed according to manufactures instructions.

1. Determine the chemical type, amount, and application method by reviewing sewer line length and diameter as specified in the work order. The following should be completed:
    a. Sewer lines with a PACP rating of 4 or 5 cannot receive an application of the chemical root control agent, unless City can ensure that no significant amount of root control agent will escape the sewer line through any line defect. Get confirmation with supervisor to proceed with work. Collect necessary equipment to reduce the amount of root control agent that can escape through a sewer line defect. If no confirmation, document and submit reasons why work order could not be completed as instructed.
    b. Where groundwater can be contaminated via infiltration or exfiltration, a root control chemical cannot be applied. Document and submit why work order was not completed as instructed.
2. Regional Water Quality Control Plant (RWQCP) operators need to be notified the type, quantity, and location of chemical being applied no less than 24-hours prior to application. Work will be delayed until RWQCP operators receive proper notification.
3. Review maps for location of easements. Confirm proper notifications were sent to residents and businesses that could be

impacted by the work order. Work will be delayed until proper notifications are sent.

4. Prepare a map that identifies the PACP rating in the section being treated if known. The map must identify the location of application, the chemicals to be used, and the amount applied.

B. PRIOR TO LEAVING RWQCP:

1. Read chemical product label thoroughly, make sure Material Safety Data Sheet matches the chemical being applied.
2. Chemical root control products with breakdown products must be non-toxic to aquatic plants or animals.
3. Copper compounds are not registered for use in California for sewer line root control.
4. Pre-trip inspection of the preparation and applicator equipment and its components shall be completed based on the application method. Staff shall ensure the equipment is capable of preparing and applying chemical root control according to manufacturer's specifications.
5. Complete a Vehicle Condition Report. The Vehicle Condition Report shall accurately describe the findings of the unit inspection.
6. Discuss the use of hand signals if required.
7. Discuss the need for added assistance.

C. AT THE JOB SITE:

1. Wear Personal Protective Equipment (PPE).
2. Discuss the use of hand signals if required.
3. Discuss the need for added assistance.
4. Post traffic control according to state and federal regulations (Temporary Traffic Control; Short-Duration).
5. Set up delineation around unit appropriate for current traffic conditions.
6. Observe and take note of distance between sewer and adjacent buildings.
7. Observe and take note of invert elevation of building drains in relation to sewer elevation.
8. Move the chemical application unit into the traffic controlled area and position over manhole.
9. Evaluate risk of root control agent escape into sensitive areas. If necessary set up chemical spill control barriers.

D. CHEMICAL ROOT CONTROL APPLICATION:

NOTE: The application procedures will be followed according to manufactures instructions. If available, procedures for specific application methods will be included in Pesticide Application by Method section.

1. General Notes:
   a. Change appropriate PPE when working with root control agents.
   b. Open upstream and downstream (if applicable) manhole (a sledgehammer may be needed to loosen the manhole cover) and verify sewer line's diameter and length are consistent with work order.
   c. Assemble chemical root control application equipment according to equipment manufactures instructions.
   d. Prepare chemical root control agent's solutions and mixtures according to chemical manufactures instructions.
   e. Chemical root control agents will be applied according to manufactures instructions.
2. Direct Pour Method of RootX:

   For sewer lines between 6-inches and 10-inches in diameter that do not exceed 250-feet in length.

Pipe Length	RootX	Water
Up to 150-ft.	20 lbs.	30 gal.
151-ft. to 250-ft.	40 lbs.	40 gal.

   a. Assemble the equipment needed at the upstream manhole. You will need up to one 40 lb. box of RootX and 30-40 gallons of water.
   b. Take the RootX bag(s) out of the box and remove the tie separating the two chemicals, cut a small hole into the narrow side of the bag to allow some air in for mixing.
   c. Firmly grasp both ends of the bag making sure to cover the hole, and slowly rock it back and forth for about a minute to mix the two chemicals together. For RootX to work properly, the chemicals must be completely mixed, creating a uniform gray mixture throughout the bag.
   d. Pour the RootX into the manhole directing it toward the outgoing invert or downstream side. Try to direct as much as possible into the trough as opposed to on the bench. You want the product to flow down the line and foam up, and not just foam up inside the manhole.
   e. Immediately pour enough water to activate the root-killing foam and push the foam down the length of the line (30-40 gallons).

3. Vacuuming Procedure (when needed):
    a. Inspect the vacuum hose, tubes, and clamps to ensure they are in good working order prior to use.
    b. Attach the vacuum tube(s) to the vacuum hose using the tube clamps. Vibrations from the vacuum can result in accidental opening of the tube clamps. Duct tape may be used to secure the clamp handles if such a concern exists.
    c. Tie a rope to the lowest tube to assist in the lowering and guiding of tubes.
    d. Lower the tube into the manhole using the boom joy stick or remote control.
    e. Place the vacuum tube into channel to vacuum debris.
    f. Continue with line cleaning while vacuuming the channel.
    g. Once the leader hose is visible, lower the water pressure enough to pull the tiger tail up so that it no longer prevents debris from exiting the pipe. While vacuuming, increase the water pressure to push the remaining debris from the pipe into the vacuum tube.
    h. Once you have completed cleaning the sewer line and all debris has been removed from the manhole, remove the vacuum tube.
4. Site Cleanup:
    a. Minor spills or leaks of a few gallons or less can usually be cleaned up easily. Be sure to wear all the PPE required for mixing and loading, including respiratory equipment if odor is persistent. Refer to specific product labeling and Material Safety Data Sheets (MSDS) for cleanup procedures. See Pesticide Leak and Spill Procedures Section for Major Spill Procedures.
    b. Clean the manhole frame rim.
    c. Document the condition of the manhole.
    d. Close manhole cover.
    e. Ensure manhole cover seals property. Use sealant, tape, or cord, to restore a proper seal as needed.
    f. Replace pick hole corks as needed.
    g. Pick up any tools and secure.
    h. Pick up any debris and dispose in a properly labeled waste container.
    i. Pick up traffic control.
5. Post Cleaning Tasks:
    a. At the end of the shift a Post Trip Inspection of the unit, its components, tool, and equipment shall be performed and a Vehicle Condition Report completed accurately.

b. If the vacuum was used, the debris tank shall be emptied at the end of the shift. Liquids shall be decanted in the field into an appropriate manhole or at the RWQCP headworks. Debris shall be dumped at a predesignated location at the RWQCP.
c. All units shall be stored at the end of the day with their fuel and water tanks full, tools available and secure, cabs cleaned, buckets and baskets emptied, and otherwise left ready for immediate dispatch.
d. Consult the pesticide label for disposal instructions if you have leftover pesticide materials.
e. Proper disposal of empty pesticide containers. Leftover pesticides should be kept in tightly closed containers in your storage facility. Always triple rinse empty containers of liquid pesticides Offer empty containers for recycling or reconditioning, or puncture and dispose of in a sanitary landfill. Containers may require inspection by local agricultural commissioner offices before they can be offered for recycling or disposed of in a landfill.
f. Submit daily work reports to the Supervisor at end of shift.
g. Schedule a post inspection before the expiration of the chemical's applicable warranty.

6. Post Inspection:
   a. Collect applicable reports filed for the sewer line that requires a post inspection. Verification through CCTV that sewer lines prior to the expiration of the applicable warranty that the chemical root control agents effectively removed the identified roots. Refer to CCTV SOP inspection procedures.

PESTICIDE LEAK AND SPILL PROCEDURES

Major Spill. Cleaning up major spills may be too difficult to handle without professional help. In these cases, keep people away from the spill and confine it if possible. Call the local fire department and the local agricultural commissioner's office for assistance. Decontaminate anyone who contacted the spill and administer first aid if necessary, then arrange for medical help. Authorities may contact CHEMTREC 1 (800) 924-9300 for advice on cleaning up the spill. Do not leave the area until responsible help arrives.

A. <u>REPORTING SPILLS:</u>
   1. Report all major spills by phone to your local Agricultural Commissioner.

2. Maybe be required to notify other authorities, if:
    a. The spill is on a highway, call the California Highway Patrol.
    b. The spill is on a county or city road, call the county sheriff or city police.
    c. The spill is on a body of water or waterway, the state health department; regional, state, or federal water quality or pollution office and state fish and game/wildlife agency. Determine the chemical type, amount, and application method by reviewing sewer line length and diameter as specified in the work order. If applicable, the following should be considered:

B. SPILL CONTROL:
1. Prevent further spill by shutting off equipment, righting tipped containers, or catching the leak in a pan or other container.
2. Prevent the spill from spreading by building a dike of soil, sand, or other absorbent around the spill.
3. Rope off the area and flag it to keep people away from the spilled chemicals.
4. Do not leave the spill area unless someone is there to confine the spill and warn of the danger.
5. If the pesticide was spilled on anyone, immediately follow appropriate decontamination procedures.

C. SPILL CLEANUP:
1. Use absorbent material such as soil, kitty litter, sawdust, or an absorbent clay to soak up the spill.
2. Shovel all contaminated material into a leak proof container or chemical resistant bag for disposal. The disposal container must bear a label indicating its contents and the signal word of the pesticide. Dispose of material as you would excess pesticides at a hazardous waste disposal facility.
3. Do not hose down the area because this spreads the chemical. Always work carefully and do not hurry.
4. Do not let anyone enter the area until the spill is completely cleaned up.
5. Refer to the pesticide product safety data sheet (SDS) for information on cleaning up and decontaminating small spill sites.
6. Foam spill act very similarly to liquids if left unattended because they gradually convert to liquids. Therefore clean up procedures to remove foam from surfaces should begin at once. For instance, foam should be shoveled off planted areas immediately to reduce damage and to prevent foams from liquefying. Clean

areas contaminated with foam with minimal amounts of water. Do not hose foam spills onto planted areas.

a. **Outdoor spill considerations**: Try to pick up the foam as quickly as possible before it liquefies. Scoop foam up with a shovel and transfer it to a manhole or place it into chemical-resistant plastic bags. Empty the foam into a manhole. Triple rinse the bags before disposing of them in a landfill. Place the rinse into the manhole. For spills on the pavement, dispose of the foam in a manhole then rinse the area into the manhole. If the spill occurs on soil remove all contaminated soil and place it in sealed containers and dispose of it in accordance with local regulations.
b. **Indoor spill considerations**: Spills will usually occur in bathrooms, basements, or laundry rooms where drains are connected to sewer lines. Evacuate the building if the pungent, rotten egg or sulfur-like odor of metam-sodium is detected. Open exterior doors and windows and ventilate with fans. Seal all heating and air conditioning vents to prevent contaminating the system. Scoop up foam with shovels or dust pans and place it in plastic bags. Seal the bags and remove them from the building. Dispose of foam in the nearest manhole. Triple rinse the plastic bags and disposes of them in a landfill. Pour rinse into the manhole. On hard floors wipe up remaining liquid with rags or other absorbent material and dispose of as directed by local regulations. Wash the floor at least three times with detergent, flushing each down a drain. If rugs or cloth materials become wet with foam, take them outside if possible and dry them before laundering separately. On carpeting use a wet vacuum and flush foam down the drain. Shampoo with detergent at least three times. Ventilate area and allow to dry. If odor persists remove and replace the contaminated material.

CIRCUMSTANCES REQUIRING SPECIAL CONSIDERATION/PRIOR AUTHORIZATION

Work in High Traffic Areas:

Work in high traffic areas, which include but are not limited to, Van Buren, Alessandro, Chicago, Central, Columbia, and etc. require special advance planning in regard to time of day and traffic control. Work in these areas shall not commence until the assigned Wastewater Collection System Crew leader, working with the crew and scheduler, has presented a work plan to, and received approval from the Supervisor.

Work on Private Property:

Staff are not authorized to drive on private property or sidewalks unless there is a sewer or storm drain easement or public right of way. Should staff need to drive on private property to perform their duties, prior email authorization from the Senior or Supervisor is required.

- Should staff need to move about or work in close proximity to private property, staff should diligently attempt to contact the property owner to inform them of their presence and the work being performed. Staff shall take before and after work pictures of the work area and points of ingress and egress.

Staff are encouraged to contact the Wastewater Mechanical Supervisor (Collections) should there be any questions or clarification concerning this Standard Operating Procedure.

Appendix 5B

CHEMICAL ROOT CONTROL SOP: FDU 300 APPLICATION METHOD ROOTX

Number: IX-001

Public Works Department
Wastewater Division

EFFECTIVE DATE: **MONTH/YEAR**
REVIEW DATE: **MONTH/YEAR**
PREPARED BY: **RWQCP Management**

APPROVED:

_____
Deputy Public Works Director,

Wastewater

City of Riverside
RWQCP Administrative Directive

SUBJECT: **CHEMICAL ROOT CONTROL STANDARD OPERATING PROCEDURE: FDU 300 APPLICATION METHOD RootX**

PURPOSE:

Chemically eliminate and retard root growth in the sanitary sewer system.

GOAL:

To locate and remove blockages caused by roots. Reduce infiltration caused by roots. Perform regularly scheduled root control of known trouble spots. Restore pipe capacity to a minimum of 95% of the original carrying capacity. The following steps outline the minimum expectations for Wastewater Collections Staff to effectively use chemical root control.

DEFINITIONS:

Unit - Combination or Hydro only sewer cleaning trucks.
Crew Leader - Any individual serving in the capacity of Wastewater Collections System Crew Leader.
Senior - The individual serving in the capacity of Senior Wastewater Collection System Technician.
Staff - Any individuals working within the Wastewater Collections Section and assigned to lead, perform, or support sewer line cleaning activities.
Supervisor - The individual serving in the capacity of Wastewater Mechanical Supervisor – Collections.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Working safely is the number one goal for all Wastewater Division employees. Employees are responsible for ensuring they and their coworkers employ and understand proper PPE and safe work practices. Below is the minimum safety equipment staff are expected to have readily available to perform sewer line cleaning.

- Hard hat.
- Rubber or synthetic material boots.
- Supplied Air When Working in Confined Spaces.
- Class III ANSI Safety Vest.
- Safety goggles (not safety glasses).
- Hearing protection.
- Leather Gloves(1).
- Waterproof Apron.
- City issued uniform (long pants & long sleeved shirts).
- Safety toe boots(1).
- Calibrated Gas Detector.
- Traffic cones (9 minimum).
- Gauntlet-length Waterproof Glove.
- NIOSH Approved TC-23C Cartridge Respirator.
- First Aid Kit.

(1) Only worn during jobsite setup and takedown, not to be worn during preparation or application of chemical root control.

(2) Cloth coveralls must be laundered before being reused. The law requires that clean coveralls be used at the beginning of each work period.

REQUIRED FORMS:

- Work Order.
- Material Safety Sheet.
- Proof of Certification of Pesticide Applicators.
- Emergency Contact List.
- Pre-Trip Inspection Form.

PERSONNEL, TOOLS, AND EQUIPMENT:

- Minimum 2-person crew[1].
- Root chemical control[2].
- Chemical mixing equipment.
- Chemical application equipment[3].
- Vehicle Condition Report booklet.
- Sewer and storm drain map book.
- Spill containment supplies.
- Hydro hose rollers/skids plates.
- Manhole sealant/tape/cord.
- Corks.
- Push broom.
- Manhole hook.
- Fully charged City issued cell phone.
- Sledgehammer.
- Square and round point shovels.
- Debris hook and catcher.
- Disinfectant sprayer.
- Duct tape.
- Proper nozzles and skids.
- Tiger tails with rope.
- Mirror and spotlight.
- Poles and attachments.
- Measuring wheel.

(1) May require more with Supervisor approval.
(2) Use only chemical root control agents with breakdown products non-toxic to aquatic plants or animals.
(3) Specified by manufacture.

PERFORMANCE STANDARD:

To perform sewer line cleaning competently and without supervision, staff must be able to:

- Certified Pesticides Applicator.
- Understand written and verbal directions.
- Operate any Combination or Hydro Unit in the Section's fleet.
- Read and comprehend City of Riverside sewer and storm drain map books and work orders.
- Use hand radio, laptop computer, and city issued cell phone.
- Setup effective traffic control.
- Know and perform sewer line cleaning operations and techniques.
- Know and use hand signals (line cleaning and traffic control).
- Select and use proper PPE.
- Demonstrate proficiency using Oracle UWAM including an ability to lookup, view, and verify details of sewer system assets.

APPLICATION PROCEDURE

Prior to performing sewer line cleaning and before leaving the Water Quality Control Plant, project preparation and a pre-trip inspection of the unit and its components shall be completed along with a Vehicle Condition Report. The Vehicle Condition Report shall accurately describe the findings of the

unit inspection. Staff shall ensure their assigned unit is capable of cleaning the lines scheduled per the following:

Unit	Pipe Diameter		
	6" – 10"	10"-15"	15" +
E-386	X	X	X
E-372	X	X	X
E-314	X	X	X
E-327	X	X	
E-444	X	X	
Mongoose	X		

A. PROJECT PREPARATION:

NOTE: It is recommended that project preparation begins no less than three (3) days prior of planned application. The application procedures will be followed according to manufactures instructions.

1. Determine the chemical type, amount, and application method by reviewing sewer line length and diameter as specified in the work order. The following should be completed:
    a. Sewer lines with a PACP rating of 4 or 5 cannot receive an application of the chemical root control agent, unless City can ensure that no significant amount of root control agent will escape the sewer line through any line defect. Get confirmation with supervisor to proceed with work. Collect necessary equipment to reduce the amount of root control agent that can escape through a sewer line defect. If no confirmation, document and submit reasons why work order could not be completed as instructed.
    b. Where groundwater can be contaminated via infiltration or exfiltration, a root control chemical cannot be applied. Document and submit why work order was not completed as instructed.
2. Regional Water Quality Control Plant (RWQCP) operators need to be notified the type, quantity, and location of chemical being applied no less than 24-hours prior to application. Work will be delayed until RWQCP operators receive proper notification.
3. Review maps for location of easements. Confirm proper notifications were sent to residents and businesses that could be

impacted by the work order. Work will be delayed until proper notifications are sent.

4. Prepare a map that identifies the PACP rating in the section being treated if known. The map must identify the location of application, the chemicals to be used, and the amount applied.

B. PRIOR TO LEAVING RWQCP:

1. Read chemical product label thoroughly, make sure Material Safety Data Sheet matches the chemical being applied.
2. Chemical root control products with breakdown products must be non-toxic to aquatic plants or animals.
3. Copper compounds are not registered for use in California for sewer line root control.
4. Pre-trip inspection of the preparation and applicator equipment and its components shall be completed based on the application method. Staff shall ensure the equipment is capable of preparing and applying chemical root control according to manufacturer's specifications.
5. Complete a Vehicle Condition Report. The Vehicle Condition Report shall accurately describe the findings of the unit inspection.
6. Discuss the use of hand signals if required.
7. Discuss the need for added assistance.

C. AT THE JOB SITE:

1. Wear Personal Protective Equipment (PPE).
2. Discuss the use of hand signals if required.
3. Discuss the need for added assistance.
4. Post traffic control according to state and federal regulations (Temporary Traffic Control; Short-Duration).
5. Set up delineation around unit appropriate for current traffic conditions.
6. Observe and take note of distance between sewer and adjacent buildings.
7. Observe and take note of invert elevation of building drains in relation to sewer elevation.
8. Move the chemical application unit into the traffic controlled area and position over manhole.
9. Evaluate risk of root control agent escape into sensitive areas. If necessary set up chemical spill control barriers.

D. CHEMICAL ROOT CONTROL APPLICATION:

NOTE: The application procedures will be followed according to manufactures instructions. If available, procedures for specific application methods will be included in Pesticide Application by Method section.

1. General Notes:
   a. Change appropriate PPE when working with root control agents.
   b. Open upstream and downstream (if applicable) manhole (a sledgehammer may be needed to loosen the manhole cover) and verify sewer line's diameter and length are consistent with work order.
   c. Assemble chemical root control application equipment according to equipment manufactures instructions.
   d. Prepare chemical root control agent's solutions and mixtures according to chemical manufactures instructions.
   e. Chemical root control agents will be applied according to manufactures instructions.
2. FDU 300 Application Method - RootX:

   For sewer lines between 8-inches and 24-inches in diameter that do not exceed 400-feet in length with jetter truck and FDU 300 applicator.

Pipe Length	RootX	Water
Up to 400-ft.	20 lbs.	--

   a. Assemble the equipment needed at the upstream manhole. You will need up to one 20 lb. bag of RootX, the FDU 300 applicator, and a set of poles.
   b. Set up the jetter truck at the downstream manhole. Have the jetter truck operator run a cleaning nozzle up the line to the upstream manhole, then shut off the equipment. Using poles pull the nozzle out of the man hole making sure there is sufficient slack to do so before hand.
   c. Set up the RootX loading tripod over the manhole and clamp in the applicator with the spray nozzle removed.
   d. Take the RootX bag out of the box and remove the tie separating the two chemicals, cut a small hole into the narrow side of the bag to allow some air in for mixing.
   e. Firmly grasp both ends of the bag making sure to cover the hole, and slowly rock it back and forth for about a minute to mix the two chemicals together. For RootX to work properly, the chemicals must be completely mixed, creating a uniform gray mixture throughout the bag.

f. Open the bag of RootX at the tapered end and insert the transfer tube and lock into place using the snap-clamp and O-ring. Lock the FDU 300 with spray nozzle removed into the loading tripod. Press the transfer tube downward and turn to the right to lock on the applicator.
g. Fill the FDU 300 with the RootX® formula. Then remove the transfer tube and bag. Discard the bag and save the transfer tube, snap-clamp, and O-ring for the next application. Reattach the FDU 300 Spray nozzle by pressing down into the applicator and turning the nozzle to the right. Make sure that the arrows are lined up to signal that the nozzle is locked in place. Then pullup on the nozzle to verify that it is locked.
h. Remove the cleaning nozzle from the jetter trucks hose. Remove and lay out the applicator then attach the RootX leader hose to the inlet (red) end. Then attach the other end of the leader hose to the jetter truck hose. Use the hook and rope provided to run under and through the FDU 300 eyelet to assist in lowering the applicator into the manhole.
i. Signal the jetter truck operator to reel the hose back in (no water), until the FDU is lying flat in the bottom of the manhole. Slacken the rope to drop off the hook. At this time the jetter truck operator can turn on the water to idle flow and begin to pull the FDU 300 back through the line.
j. Once the applicator has reached the downstream manhole, continue to operate the jetter truck until no foam is spraying out the back of the FDU 300. Remove and clean up.

3. Vacuuming Procedure (when needed):
    a. Inspect the vacuum hose, tubes, and clamps to ensure they are in good working order prior to use.
    b. Attach the vacuum tube(s) to the vacuum hose using the tube clamps. Vibrations from the vacuum can result in accidental opening of the tube clamps. Duct tape may be used to secure the clamp handles if such a concern exists.
    c. Tie a rope to the lowest tube to assist in the lowering and guiding of tubes.
    d. Lower the tube into the manhole using the boom joy stick or remote control.
    e. Place the vacuum tube into channel to vacuum debris.
    f. Continue with line cleaning while vacuuming the channel.
    g. Once the leader hose is visible, lower the water pressure enough to pull the tiger tail up so that it no longer prevents debris from exiting the pipe. While vacuuming, increase the

water pressure to push the remaining debris from the pipe into the vacuum tube.

h. Once you have completed cleaning the sewer line and all debris has been removed from the manhole, remove the vacuum tube.

4. Application Equipment Cleanup:
    a. Turn off and disconnect all application equipment as soon as application is complete. Follow the equipment manufacturers' cleaning instructions. Clean both the inside and outside of the application equipment, including all hoses and nozzles. Do not contaminate nearby bodies of water when disposing of equipment wash water. **Cleaning should be performed by or under the supervision of a certified handler.**
    b. Properly store and secure cleaned application equipment.
    c. If using equipment with a large chemical mixing tank return the equipment to the area designated for equipment cleanup and cleans it according to the manufacturer's directions. **Equipment cleaning areas must have provisions for preventing the contaminated water from leaving the area through runoff or percolation into the soil.**
    d. Properly store unused chemical following manufacturer's instructions.
    e. Report any problems with application equipment, tools, or sewers that were cleaned to the Supervisor.
5. Site Cleanup:
    a. Minor spills or leaks of a few gallons or less can usually be cleaned up easily. Be sure to wear all the PPE required for mixing and loading, including respiratory equipment if odor is persistent. Refer to specific product labeling and Material Safety Data Sheets (MSDS) for cleanup procedures. See Pesticide Leak and Spill Procedures Section for Major Spill Procedures.
    b. If applicable, remove nozzle from sewer line and manhole. (Do not use the hydraulic hose reel to remove nozzle from the line; it will damage the skid and nozzle).
    c. Clean the manhole frame rim.
    d. Document the condition of the manhole.
    e. Close manhole cover.
    f. Ensure manhole cover seals property. Use sealant, tape, or cord, to restore a proper seal as needed.
    g. Replace pick hole corks as needed.
    h. Pick up any tools and secure.

   i. Pick up any debris and dispose in a properly labeled waste container.
   j. Pick up traffic control.
6. Refilling Procedure:
   a. Before connecting to a City hydrant to refill a unit's water tanks, flush the hydrant to remove any sediments (flushing should only last a few seconds).
   b. Staff is only authorized to fill water tanks on collections units from City hydrants located curbside. Staff are not to fill in any private parking lot/drive way.
7. Post Cleaning Tasks:
   a. At the end of the shift a Post Trip Inspection of the unit, its components, tool, and equipment shall be performed and a Vehicle Condition Report completed accurately.
   b. If the vacuum was used, the debris tank shall be emptied at the end of the shift. Liquids shall be decanted in the field into an appropriate manhole or at the RWQCP headworks. Debris shall be dumped at a predesignated location at the RWQCP.
   c. All units shall be stored at the end of the day with their fuel and water tanks full, tools available and secure, cabs cleaned, buckets and baskets emptied, and otherwise left ready for immediate dispatch.
   d. Consult the pesticide label for disposal instructions if you have leftover pesticide materials.
   e. Proper disposal of empty pesticide containers. Leftover pesticides should be kept in tightly closed containers in your storage facility. Always triple rinse empty containers of liquid pesticides Offer empty containers for recycling or reconditioning, or puncture and dispose of in a sanitary landfill. Containers may require inspection by local agricultural commissioner offices before they can be offered for recycling or disposed of in a landfill.
   f. Submit daily work reports to the Supervisor at end of shift.
   g. Schedule a post inspection before the expiration of the chemical's applicable warranty.
8. Post Inspection:
   a. Collect applicable reports filed for the sewer line that requires a post inspection. Verification through CCTV that sewer lines prior to the expiration of the applicable warranty that the chemical root control agents effectively removed the identified roots. Refer to CCTV SOP inspection procedures.

PESTICIDE LEAK AND SPILL PROCEDURES

Major Spill. Cleaning up major spills may be too difficult to handle without professional help. In these cases, keep people away from the spill and confine it if possible. Call the local fire department and the local agricultural commissioner's office for assistance. Decontaminate anyone who contacted the spill and administer first aid if necessary, then arrange for medical help. Authorities may contact CHEMTREC 1 (800) 924-9300 for advice on cleaning up the spill. Do not leave the area until responsible help arrives.

A. REPORTING SPILLS:
   1. Report all major spills by phone to your local Agricultural Commissioner.
   2. Maybe be required to notify other authorities, if:
      a. The spill is on a highway, call the California Highway Patrol.
      b. The spill is on a county or city road, call the county sheriff or city police.
      c. The spill is on a body of water or waterway, the state health department; regional, state, or federal water quality or pollution office and state fish and game/wildlife agency. Determine the chemical type, amount, and application method by reviewing sewer line length and diameter as specified in the work order. If applicable, the following should be considered:
   3. Prevent further spill by shutting off equipment, righting tipped containers, or catching the leak in a pan or other container.
   4. Prevent the spill from spreading by building a dike of soil, sand, or other absorbent around the spill.
   5. Rope off the area and flag it to keep people away from the spilled chemicals.
   6. Do not leave the spill area unless someone is there to confine the spill and warn of the danger.
   7. If the pesticide was spilled on anyone, immediately follow appropriate decontamination procedures.

B. SPILL CLEANUP:
   1. Use absorbent material such as soil, kitty litter, sawdust, or an absorbent clay to soak up the spill.
   2. Shovel all contaminated material into a leak proof container or chemical resistant bag for disposal. The disposal container must bear a label indicating its contents and the signal word of the pesticide. Dispose of material as you would excess pesticides at a hazardous waste disposal facility.
   3. Do not hose down the area because this spreads the chemical. Always work carefully and do not hurry.

4. Do not let anyone enter the area until the spill is completely cleaned up.
5. Refer to the pesticide product safety data sheet (SDS) for information on cleaning up and decontaminating small spill sites.
6. Foam spill act very similarly to liquids if left unattended because they gradually convert to liquids. Therefore clean up procedures to remove foam from surfaces should begin at once. For instance, foam should be shoveled off planted areas immediately to reduce damage and to prevent foams from liquefying. Clean areas contaminated with foam with minimal amounts of water. Do not hose foam spills onto planted areas.
    a. **Outdoor spill considerations**: Try to pick up the foam as quickly as possible before it liquefies. Scoop foam up with a shovel and transfer it to a manhole or place it into chemical-resistant plastic bags. Empty the foam into a manhole. Triple rinse the bags before disposing of them in a landfill. Place the rinse into the manhole. For spills on the pavement, dispose of the foam in a manhole then rinse the area into the manhole. If the spill occurs on soil remove all contaminated soil and place it in sealed containers and dispose of it in accordance with local regulations.
    b. **Indoor spill considerations**: Spills will usually occur in bathrooms, basements, or laundry rooms where drains are connected to sewer lines. Evacuate the building if the pungent, rotten egg or sulfur-like odor of metam-sodium is detected. Open exterior doors and windows and ventilate with fans. Seal all heating and air conditioning vents to prevent contaminating the system. Scoop up foam with shovels or dust pans and place it in plastic bags. Seal the bags and remove them from the building. Dispose of foam in the nearest manhole. Triple rinse the plastic bags and disposes of them in a landfill. Pour rinse into the manhole. On hard floors wipe up remaining liquid with rags or other absorbent material and dispose of as directed by local regulations. Wash the floor at least three times with detergent, flushing each down a drain. If rugs or cloth materials become wet with foam, take them outside if possible and dry them before laundering separately. On carpeting use a wet vacuum and flush foam down the drain. Shampoo with detergent at least three times. Ventilate area and allow to dry. If odor persists remove and replace the contaminated material.

CIRCUMSTANCES REQUIRING SPECIAL CONSIDERATION / PRIOR AUTHORIZATION

Shooting Backwards

Some circumstances such as heavy traffic, busy intersections, access to a downstream manhole, and etc. may necessitate cleaning a line with the direction of wastewater flow (shooting backwards). In the event the operator wishes to attempt to clean with the flow, prior verbal approval shall be received from the assigned Wastewater Collections System Crew Leader or Senior. **At no time shall inconvenience or general ease be justification for shooting backwards.**

Shooting Without a Skid

In some instances staff may need to clean a line without using a cage. In the event the operator wishes to attempt to clean with no skid, prior verbal approval shall be received from the assigned Wastewater Collections System Crew Leader or Senior.

Nozzle Stuck in a Line

In the event a nozzle becomes stuck in a sewer line, and the operator is unable to quickly and safely remove it, notification shall be provided to the assigned Wastewater Collections System Crew Leader within 30 minutes. Upon receipt of notification, the Crew Leader shall work with the operator to recover the nozzle and/or elevate the issue through the senior for assistance.

Work in High Traffic Areas

Work in high traffic areas, which include but are not limited to, Van Buren, Alessandro, Chicago, Central, Columbia, and etc. require special advance planning in regard to time of day and traffic control. Work in these areas shall not commence until the assigned Wastewater Collection System Crew leader, working with the crew and scheduler, has presented a work plan to, and received approval from the Supervisor.

Work on Private Property

Staff are not authorized to drive on private property or sidewalks unless there is a sewer or storm drain easement or public right of way. Should staff need to drive on private property to perform their duties, prior email authorization from the Senior or Supervisor is required.

- Should staff need to move about or work in close proximity to private property, staff should diligently attempt to contact the property owner to inform them of their presence and the work being performed. Staff shall take before and after work pictures of the work area and points of ingress and egress.

Staff are encouraged to contact the Wastewater Mechanical Supervisor (Collections) should there be any questions or clarification concerning this Standard Operating Procedure.

Appendix 5C

CHEMICAL ROOT CONTROL SOP: SERVICE LATERAL/CLEAN-OUT APPLICATION METHOD ROOTX

Public Works Department
Wastewater Division

EFFECTIVE DATE: **MONTH/YEAR**
REVIEW DATE: **MONTH/YEAR**
PREPARED BY: **RWQCP Management**

APPROVED:

_____
Deputy Public Works Director, Wastewater

City of Riverside
RWQCP Administrative Directive

SUBJECT: **CHEMICAL ROOT CONTROL STANDARD OPERATING PROCEDURE: SERVICE LATERAL/CLEANOUT APPLICATION METHOD RootX**

PURPOSE:

Chemically eliminate and retard root growth in the sanitary sewer system.

GOAL:

To locate and remove blockages caused by roots. Reduce infiltration caused by roots. Perform regularly scheduled root control of known trouble spots. Restore pipe capacity to a minimum of 95% of the original carrying capacity. The following steps outline the minimum expectations for Wastewater Collections Staff to effectively use chemical root control.

DEFINITIONS:

Unit -	Combination or Hydro only sewer cleaning trucks.
Crew Leader -	Any individual serving in the capacity of Wastewater Collections System Crew Leader.
Senior -	The individual serving in the capacity of Senior Wastewater Collection System Technician.
Staff -	Any individuals working within the Wastewater Collections Section and assigned to lead, perform, or support sewer line cleaning activities.
Supervisor -	The individual serving in the capacity of Wastewater Mechanical Supervisor – Collections.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Working safely is the number one goal for all Wastewater Division employees. Employees are responsible for ensuring they and their coworkers employ and understand proper PPE and safe work practices. Below is the minimum safety equipment staff are expected to have readily available to perform sewer line cleaning.

- Hard hat.
- Rubber or synthetic material boots.
- Supplied Air When Working in Confined Spaces.
- Class III ANSI Safety Vest.
- Safety goggles (not safety glasses).
- Hearing protection.
- Leather Gloves(1).
- Waterproof Apron.
- City issued uniform (long pants & long sleeved shirts).
- Safety toe boots(1).
- Calibrated Gas Detector.
- Traffic cones (9 minimum).
- Gauntlet-length Waterproof Glove.
- NIOSH Approved TC-23C Cartridge Respirator.
- First Aid Kit.

(1) Only worn during jobsite setup and takedown, not to be worn during preparation or application of chemical root control.

REQUIRED FORMS:

- Work Order.
- Material Safety Sheet.
- Proof of Certification of Pesticide Applicators.
- Emergency Contact List.
- Pre-Trip Inspection Form.

PERSONNEL, TOOLS, AND EQUIPMENT:

- Minimum 2-person crew(1).
- Root chemical control(2).
- Chemical mixing equipment.
- Chemical application equipment(3).
- Vehicle Condition Report booklet.
- Sewer and storm drain map book.
- Spill containment supplies.
- Hydro hose rollers/skids plates.
- Manhole sealant/tape/cord.
- Empty Buckets and debris baskets.
- Corks.
- Manhole hook.
- Fully charged City issued cell phone.
- Sledgehammer.
- Square and round point shovels.
- Debris hook and catcher.
- Disinfectant sprayer.
- Duct tape.
- Proper nozzles and skids.
- Tiger tails with rope.
- Mirror and spotlight.
- Poles and attachments.
- Measuring wheel.
- Push broom.

(1) May require more with Supervisor approval.
(2) Use only chemical root control agents with breakdown products non-toxic to aquatic plants or animals.
(3) Specified by manufacture.

PERFORMANCE STANDARD

To perform sewer line cleaning competently and without supervision, staff must be able to:

- Certified Pesticides Applicator.
- Understand written and verbal directions.
- Operate any Combination or Hydro Unit in the Section's fleet.
- Read and comprehend City of Riverside sewer and storm drain map books and work orders.
- Use hand radio, laptop computer, and city issued cell phone.
- Setup effective traffic control.
- Know and perform sewer line cleaning operations and techniques.
- Know and use hand signals (line cleaning and traffic control).
- Select and use proper PPE.
- Demonstrate proficiency using Oracle UWAM including an ability to lookup, view, and verify details of sewer system assets.

APPLICATION PROCEDURE

Prior to performing sewer line cleaning and before leaving the Water Quality Control Plant, project preparation and a pre-trip inspection of the unit and its components shall be completed along with a Vehicle Condition Report. The Vehicle Condition Report shall accurately describe the findings of the

unit inspection. Staff shall ensure their assigned unit is capable of cleaning the lines scheduled per the following:

Unit	Pipe Diameter		
	6" – 10"	10"-15"	15" +
E-386	X	X	X
E-372	X	X	X
E-314	X	X	X
E-327	X	X	
E-444	X	X	
Mongoose	X		

A. PROJECT PREPARATION

NOTE: It is recommended that project preparation begins no less than three (3) days prior of planned application. The application procedures will be followed according to manufactures instructions.

1. Determine the chemical type, amount, and application method by reviewing sewer line length and diameter as specified in the work order. The following should be completed:
    a. Sewer lines with a PACP rating of 4 or 5 cannot receive an application of the chemical root control agent, unless City can ensure that no significant amount of root control agent will escape the sewer line through any line defect. Get confirmation with supervisor to proceed with work. Collect necessary equipment to reduce the amount of root control agent that can escape through a sewer line defect. If no confirmation, document and submit reasons why work order could not be completed as instructed.
    b. Where groundwater can be contaminated via infiltration or exfiltration, a root control chemical cannot be applied. Document and submit why work order was not completed as instructed.
2. Regional Water Quality Control Plant (RWQCP) operators need to be notified the type, quantity, and location of chemical being applied no less than 24-hours prior to application. Work will be delayed until RWQCP operators receive proper notification.
3. Review maps for location of easements. Confirm proper notifications were sent to residents and businesses that could be

impacted by the work order. Work will be delayed until proper notifications are sent.

4. Prepare a map that identifies the PACP rating in the section being treated if known. The map must identify the location of application, the chemicals to be used, and the amount applied.

B. PRIOR TO LEAVING RWQCP:

1. Read chemical product label thoroughly, make sure Material Safety Data Sheet matches the chemical being applied.
2. Chemical root control products with breakdown products must be non-toxic to aquatic plants or animals.
3. Copper compounds are not registered for use in California for sewer line root control.
4. Pre-trip inspection of the preparation and applicator equipment and its components shall be completed based on the application method. Staff shall ensure the equipment is capable of preparing and applying chemical root control according to manufacturer's specifications.
5. Complete a Vehicle Condition Report. The Vehicle Condition Report shall accurately describe the findings of the unit inspection.
6. Discuss the use of hand signals if required.
7. Discuss the need for added assistance.

C. AT THE JOB SITE:

1. Wear Personal Protective Equipment (PPE).
2. Discuss the use of hand signals if required.
3. Discuss the need for added assistance.
4. Post traffic control according to state and federal regulations (Temporary Traffic Control; Short-Duration).
5. Set up delineation around unit appropriate for current traffic conditions.
6. Observe and take note of distance between sewer and adjacent buildings.
7. Observe and take note of invert elevation of building drains in relation to sewer elevation.
8. Move the chemical application unit into the traffic controlled area and position over manhole.
9. Evaluate risk of root control agent escape into sensitive areas. If necessary set up chemical spill control barriers.

D. CHEMICAL ROOT CONTROL APPLICATION:

NOTE: The application procedures will be followed according to manufactures instructions. If available, procedures for specific

application methods will be included in Pesticide Application by Method section.

1. General Notes:
    a. Change appropriate PPE when working with root control agents.
    b. Open upstream and downstream (if applicable) manhole (a sledgehammer may be needed to loosen the manhole cover) and verify sewer line's diameter and length are consistent with work order.
    c. Assemble chemical root control application equipment according to equipment manufactures instructions.
    d. Prepare chemical root control agent's solutions and mixtures according to chemical manufactures instructions.
    e. Chemical root control agents will be applied according to manufactures instructions.
2. Service Lateral/ Cleanout Application Method RootX:

    For sewer laterals between 4-inches and 6-inches in diameter that do not exceed 100-feet.

Pipe Diameter	Pipe Length	RootX	Water
4-in.	Up to 50-ft.	2 lbs.	10 gal.
4-in.	51-ft. to 100-ft.	4 lbs.	20 gal.
6-in.	Up to 75-ft	4 lbs	20 gal.

In instances where this product is to be applied in easements with vegetation directly near the access point, precautions are needed to reduce the risk of damage to the property. An example would be needing to use RootX a clean out in a yard or flower bed. A work around would be to use a tarp to cover the area and cut a hole directly over the access point to allow application of RootX and contain any spillage to the tarp.

a. Assemble the equipment needed at the upstream cleanout. You will need one 2 lb. or 4 lb. Square Jar of RootX and 10-20 gallons of water.
b. Unscrew lid from top of container.
c. Attach the funnel Attach the mixing funnel/applicator by threading onto the opening where the lid was in the square container.
d. Mix RootX components by grasping the bottom of the square container and the narrow end of the mixing funnel applicator (putting a hand over the mixing funnel/applicator cap located at the narrow end of the mixing funnel/ applicator), rock the square container with the mixing funnel/applicator attached, back and forth for

approximately one minute, allowing the two dry components of RootX to go into the funnel and then back into the square container several times.

e. Apply RootX after the one minute mixing process, you may remove the cap from the narrow end of the mixing funnel/applicator and pour the entire contents of the dry product mixture through the funnel/applicator directly into the sewer cleanout.
f. Immediately pour enough water to activate the root-killing foam and push the foam down the length of the line (10-20 gallons).

3. Vacuuming Procedure (when needed):
    a. Inspect the vacuum hose, tubes, and clamps to ensure they are in good working order prior to use.
    b. Attach the vacuum tube(s) to the vacuum hose using the tube clamps. Vibrations from the vacuum can result in accidental opening of the tube clamps. Duct tape may be used to secure the clamp handles if such a concern exists.
    c. Tie a rope to the lowest tube to assist in the lowering and guiding of tubes.
    d. Lower the tube into the manhole using the boom joy stick or remote control.
    e. Place the vacuum tube into channel to vacuum debris.
    f. Continue with line cleaning while vacuuming the channel.
    g. Once the leader hose is visible, lower the water pressure enough to pull the tiger tail up so that it no longer prevents debris from exiting the pipe. While vacuuming, increase the water pressure to push the remaining debris from the pipe into the vacuum tube.
    h. Once you have completed cleaning the sewer line and all debris has been removed from the manhole, remove the vacuum tube.
4. Application Equipment Cleanup:
    a. Turn off and disconnect all application equipment as soon as application is complete. Follow the equipment manufacturers' cleaning instructions. Clean both the inside and outside of the application equipment, including all hoses and nozzles. Do not contaminate nearby bodies of water when disposing of equipment wash water. Cleaning should be performed by or under the supervision of a certified handler.
    b. Properly store and secure cleaned application equipment.
    c. If using equipment with a large chemical mixing tank return the equipment to the area designated for equipment

cleanup and cleans it according to the manufacturer's directions. Equipment cleaning areas must have provisions for preventing the contaminated water from leaving the area through runoff or percolation into the soil.

d. Properly store unused chemical following manufacturer's instructions.
e. Report any problems with application equipment, tools, or sewers that were cleaned to the Supervisor.

5. Site Cleanup:
    a. Minor spills or leaks of a few gallons or less can usually be cleaned up easily. Be sure to wear all the PPE required for mixing and loading, including respiratory equipment if odor is persistent. Refer to specific product labeling and Material Safety Data Sheets (MSDS) for cleanup procedures. See Pesticide Leak and Spill Procedures Section for Major Spill Procedures.
    b. If applicable, remove nozzle from sewer line and manhole. (Do not use the hydraulic hose reel to remove nozzle from the line; it will damage the skid and nozzle).
    c. Clean the manhole frame rim.
    d. Document the condition of the manhole.
    e. Close manhole cover.
    f. Ensure manhole cover seals property. Use sealant, tape, or cord, to restore a proper seal as needed.
    g. Replace pick hole corks as needed.
    h. Pick up any tools and secure.
    i. Pick up any debris and dispose in a properly labeled waste container.
    j. Pick up traffic control.
6. Refilling Procedure:
    a. Before connecting to a City hydrant to refill a unit's water tanks, flush the hydrant to remove any sediments (flushing should only last a few seconds).
    b. Staff is only authorized to fill water tanks on collections units from City hydrants located curbside. Staff are not to fill in any private parking lot/drive way.
7. Post Cleaning Tasks:
    a. At the end of the shift a Post Trip Inspection of the unit, its components, tool, and equipment shall be performed and a Vehicle Condition Report completed accurately.
    b. If the vacuum was used, the debris tank shall be emptied at the end of the shift. Liquids shall be decanted in the field into an appropriate manhole or at the RWQCP headworks.

Debris shall be dumped at a predesignated location at the RWQCP.

c. All units shall be stored at the end of the day with their fuel and water tanks full, tools available and secure, cabs cleaned, buckets and baskets emptied, and otherwise left ready for immediate dispatch.
d. Consult the pesticide label for disposal instructions if you have leftover pesticide materials.
e. Proper disposal of empty pesticide containers. Leftover pesticides should be kept in tightly closed containers in your storage facility. Always triple rinse empty containers of liquid pesticides Offer empty containers for recycling or reconditioning, or puncture and dispose of in a sanitary landfill. Containers may require inspection by local agricultural commissioner offices before they can be offered for recycling or disposed of in a landfill.
f. Submit daily work reports to the Supervisor at end of shift.
g. Schedule a post inspection before the expiration of the chemical's applicable warranty.

8. Post Inspection:
   a. Collect applicable reports filed for the sewer line that requires a post inspection. Verification through CCTV that sewer lines prior to the expiration of the applicable warranty that the chemical root control agents effectively removed the identified roots. Refer to CCTV SOP inspection procedures.

PESTICIDE LEAK AND SPILL PROCEDURES

Major Spill. Cleaning up major spills may be too difficult to handle without professional help. In these cases, keep people away from the spill and confine it if possible. Call the local fire department and the local agricultural commissioner's office for assistance. Decontaminate anyone who contacted the spill and administer first aid if necessary, then arrange for medical help. Authorities may contact CHEMTREC 1 (800) 924-9300 for advice on cleaning up the spill. Do not leave the area until responsible help arrives.

A. <u>REPORTING SPILLS:</u>
   1. Report all major spills by phone to your local Agricultural Commissioner.
   2. Maybe be required to notify other authorities, if:
      a. The spill is on a highway, call the California Highway Patrol.
      b. The spill is on a county or city road, call the county sheriff or city police.

c. The spill is on a body of water or waterway, the state health department; regional, state, or federal water quality or pollution office and state fish and game/wildlife agency. Determine the chemical type, amount, and application method by reviewing sewer line length and diameter as specified in the work order. If applicable, the following should be considered:

B. SPILL CONTROL:

1. Prevent further spill by shutting off equipment, righting tipped containers, or catching the leak in a pan or other container.
2. Prevent the spill from spreading by building a dike of soil, sand, or other absorbent around the spill.
3. Rope off the area and flag it to keep people away from the spilled chemicals.
4. Do not leave the spill area unless someone is there to confine the spill and warn of the danger.
5. If the pesticide was spilled on anyone, immediately follow appropriate decontamination procedures.

C. SPILL CLEANUP:

1. Use absorbent material such as soil, kitty litter, sawdust, or an absorbent clay to soak up the spill.
2. Shovel all contaminated material into a leak proof container or chemical resistant bag for disposal. The disposal container must bear a label indicating its contents and the signal word of the pesticide. Dispose of material as you would excess pesticides at a hazardous waste disposal facility.
3. Do not hose down the area because this spreads the chemical. Always work carefully and do not hurry.
4. Do not let anyone enter the area until the spill is completely cleaned up.
5. Refer to the pesticide product safety data sheet (SDS) for information on cleaning up and decontaminating small spill sites.
6. Foam spill act very similarly to liquids if left unattended because they gradually convert to liquids. Therefore clean up procedures to remove foam from surfaces should begin at once. For instance, foam should be shoveled off planted areas immediately to reduce damage and to prevent foams from liquefying. Clean areas contaminated with foam with minimal amounts of water. Do not hose foam spills onto planted areas.
    a. **Outdoor spill considerations**: Try to pick up the foam as quickly as possible before it liquefies. Scoop foam up with a shovel and transfer it to a manhole or place it into chemical-resistant plastic bags. Empty the foam into a manhole. Triple rinse the bags before disposing of them in a

landfill. Place the rinse into the manhole. For spills on the pavement, dispose of the foam in a manhole then rinse the area into the manhole. If the spill occurs on soil remove all contaminated soil and place it in sealed containers and dispose of it in accordance with local regulations.

b. **Indoor spill considerations**: Spills will usually occur in bathrooms, basements, or laundry rooms where drains are connected to sewer lines. Evacuate the building if the pungent, rotten egg or sulfur-like odor of metam-sodium is detected. Open exterior doors and windows and ventilate with fans. Seal all heating and air conditioning vents to prevent contaminating the system. Scoop up foam with shovels or dust pans and place it in plastic bags. Seal the bags and remove them from the building. Dispose of foam in the nearest manhole. Triple rinse the plastic bags and disposes of them in a landfill. Pour rinse into the manhole. On hard floors wipe up remaining liquid with rags or other absorbent material and dispose of as directed by local regulations. Wash the floor at least three times with detergent, flushing each down a drain. If rugs or cloth materials become wet with foam, take them outside if possible and dry them before laundering separately. On carpeting use a wet vacuum and flush foam down the drain. Shampoo with detergent at least three times. Ventilate area and allow to dry. If odor persists remove and replace the contaminated material.

CIRCUMSTANCES REQUIRING SPECIAL CONSIDERATION / PRIOR AUTHORIZATION

Shooting Backwards:

Some circumstances such as heavy traffic, busy intersections, access to a downstream manhole, and etc. may necessitate cleaning a line with the direction of wastewater flow (shooting backwards). In the event the operator wishes to attempt to clean with the flow, prior verbal approval shall be received from the assigned Wastewater Collections System Crew Leader or Senior. **At no time shall inconvenience or general ease be justification for shooting backwards.**

Shooting Without a Skid:

In some instances staff may need to clean a line without using a cage. In the event the operator wishes to attempt to clean with no skid, prior verbal approval shall be received from the assigned Wastewater Collections System Crew Leader or Senior.

Nozzle Stuck in a Line:
In the event a nozzle becomes stuck in a sewer line, and the operator is unable to quickly and safely remove it, notification shall be provided to the assigned Wastewater Collections System Crew Leader within 30 minutes. Upon receipt of notification, the Crew Leader shall work with the operator to recover the nozzle and/or elevate the issue through the senior for assistance.

Work in High Traffic Areas:
Work in high traffic areas, which include but are not limited to, Van Buren, Alessandro, Chicago, Central, Columbia, and etc. require special advance planning in regard to time of day and traffic control. Work in these areas shall not commence until the assigned Wastewater Collection System Crew leader, working with the crew and scheduler, has presented a work plan to, and received approval from the Supervisor.

Work on Private Property:
Staff are not authorized to drive on private property or sidewalks unless there is a sewer or storm drain easement or public right of way. Should staff need to drive on private property to perform their duties, prior email authorization from the Senior or Supervisor is required.

- Should staff need to move about or work in close proximity to private property, staff should diligently attempt to contact the property owner to inform them of their presence and the work being performed. Staff shall take before and after work pictures of the work area and points of ingress and egress.

Staff are encouraged to contact the Wastewater Mechanical Supervisor (Collections) should there be any questions or clarification concerning this Standard Operating Procedure.

Appendix 5D

CHEMICAL ROOT CONTROL SOP: VACUUM APPLICATION METHOD ROOTX

Public Works Department
Wastewater Division

EFFECTIVE DATE: **MONTH/YEAR** **APPROVED:**
REVIEW DATE: **MONTH/YEAR**
PREPARED BY: **RWQCP Management** _____
Deputy Public Works Director, Wastewater

City of Riverside
RWQCP Administrative Directive

SUBJECT: **CHEMICAL ROOT CONTROL STANDARD OPERATING PROCEDURE: VACUUM METHOD RootX**

PURPOSE:

Chemically eliminate and retard root growth in the sanitary sewer system.

Goal:

To locate and remove blockages caused by roots. Reduce infiltration caused by roots. Perform regularly scheduled root control of known trouble spots. Restore pipe capacity to a minimum of 95% of the original carrying capacity. The following steps outline the minimum expectations for Wastewater Collections Staff to effectively use chemical root control.

DEFINITIONS:

Unit - Combination or Hydro only sewer cleaning trucks.
Crew Leader - Any individual serving in the capacity of Wastewater Collections System Crew Leader.
Senior - The individual serving in the capacity of Senior Wastewater Collection System Technician.
Staff - Any individuals working within the Wastewater Collections Section and assigned to lead, perform, or support sewer line cleaning activities.
Supervisor - The individual serving in the capacity of Wastewater Mechanical Supervisor – Collections.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Working safely is the number one goal for all Wastewater Division employees. Employees are responsible for ensuring they and their coworkers employ and understand proper PPE and safe work practices. Below is the minimum safety equipment staff are expected to have readily available to perform sewer line cleaning.

- Hard hat.
- Rubber or synthetic material boots.
- Supplied Air When Working in Confined Spaces.
- Class III ANSI Safety Vest.
- Safety goggles (not safety glasses).
- Hearing protection.
- Leather Gloves(1).
- Waterproof Apron.
- City issued uniform (long pants & long sleeved shirts).
- Safety toe boots(1).
- Calibrated Gas Detector.
- Traffic cones (9 minimum).
- Gauntlet-length Waterproof Glove.
- NIOSH Approved TC-23C Cartridge Respirator.
- First Aid Kit.

(1) Only worn during jobsite setup and takedown, not to be worn during preparation or application of chemical root control.

REQUIRED FORMS:

- Work Order.
- Material Safety Sheet.
- Proof of Certification of Pesticide Applicators.
- Emergency Contact List.
- Pre-Trip Inspection Form.

PERSONNEL, TOOLS, AND EQUIPMENT:

- Minimum 2-person crew[1].
- Root chemical control[2].
- Chemical mixing equipment.
- Chemical application equipment[3].
- Vehicle Condition Report booklet.
- Sewer and storm drain map book.
- Spill containment supplies.
- Hydro hose rollers/skids plates.
- Manhole sealant/tape/cord.
- Corks.
- Empty Buckets and debris baskets.
- Manhole hook.
- Fully charged City issued cell phone.
- Sledgehammer.
- Square and round point shovels.
- Debris hook and catcher.
- Disinfectant sprayer.
- Duct tape.
- Proper nozzles and skids.
- Tiger tails with rope.
- Mirror and spotlight.
- Poles and attachments.
- Measuring wheel.
- Push broom.

(1) May require more with Supervisor approval.
(2) Use only chemical root control agents with breakdown products non-toxic to aquatic plants or animals.
(3) Specified by manufacture.

PERFORMANCE STANDARD:

To perform sewer line cleaning competently and without supervision, staff must be able to:

- Certified Pesticides Applicator.
- Understand written and verbal directions.
- Operate any Combination or Hydro Unit in the Section's fleet.
- Read and comprehend City of Riverside sewer and storm drain map books and work orders.
- Use hand radio, laptop computer, and city issued cell phone.
- Setup effective traffic control.
- Know and perform sewer line cleaning operations and techniques.
- Know and use hand signals (line cleaning and traffic control).
- Select and use proper PPE.
- Demonstrate proficiency using Oracle UWAM including an ability to lookup, view, and verify details of sewer system assets.

APPLICATION PROCEDURE

Prior to performing sewer line cleaning and before leaving the Water Quality Control Plant, project preparation and a pre-trip inspection of the unit and its components shall be completed along with a Vehicle Condition Report. The Vehicle Condition Report shall accurately describe the findings of the

unit inspection. Staff shall ensure their assigned unit is capable of cleaning the lines scheduled per the following:

Unit	Pipe Diameter		
	6" – 10"	10"-15"	15" +
E-386	X	X	X
E-372	X	X	X
E-314	X	X	X
E-327	X	X	
E-444	X	X	
Mongoose	X		

A. PROJECT PREPARATION:

NOTE: It is recommended that project preparation begins no less than three (3) days prior of planned application. The application procedures will be followed according to manufactures instructions.

1. Determine the chemical type, amount, and application method by reviewing sewer line length and diameter as specified in the work order. The following should be completed:
    a. Sewer lines with a PACP rating of 4 or 5 cannot receive an application of the chemical root control agent, unless City can ensure that no significant amount of root control agent will escape the sewer line through any line defect. Get confirmation with supervisor to proceed with work. Collect necessary equipment to reduce the amount of root control agent that can escape through a sewer line defect. If no confirmation, document and submit reasons why work order could not be completed as instructed.
    b. Where groundwater can be contaminated via infiltration or exfiltration, a root control chemical cannot be applied. Document and submit why work order was not completed as instructed.
2. Regional Water Quality Control Plant (RWQCP) operators need to be notified the type, quantity, and location of chemical being applied no less than 24-hours prior to application. Work will be delayed until RWQCP operators receive proper notification.
3. Review maps for location of easements. Confirm proper notifications were sent to residents and businesses that could be

impacted by the work order. Work will be delayed until proper notifications are sent.

4. Prepare a map that identifies the PACP rating in the section being treated if known. The map must identify the location of application, the chemicals to be used, and the amount applied.

B. PRIOR TO LEAVING RWQCP:

1. Read chemical product label thoroughly, make sure Material Safety Data Sheet matches the chemical being applied.
2. Chemical root control products with breakdown products must be non-toxic to aquatic plants or animals.
3. Copper compounds are not registered for use in California for sewer line root control.
4. Pre-trip inspection of the preparation and applicator equipment and its components shall be completed based on the application method. Staff shall ensure the equipment is capable of preparing and applying chemical root control according to manufacturer's specifications.
5. Complete a Vehicle Condition Report. The Vehicle Condition Report shall accurately describe the findings of the unit inspection.
6. Discuss the use of hand signals if required.
7. Discuss the need for added assistance.

C. AT THE JOB SITE:

1. Wear Personal Protective Equipment (PPE).
2. Discuss the use of hand signals if required.
3. Discuss the need for added assistance.
4. Post traffic control according to state and federal regulations (Temporary Traffic Control; Short-Duration).
5. Set up delineation around unit appropriate for current traffic conditions.
6. Observe and take note of distance between sewer and adjacent buildings.
7. Observe and take note of invert elevation of building drains in relation to sewer elevation.
8. Move the chemical application unit into the traffic controlled area and position over manhole.
9. Evaluate risk of root control agent escape into sensitive areas. If necessary set up chemical spill control barriers.

D. CHEMICAL ROOT CONTROL APPLICATION:

NOTE: The application procedures will be followed according to manufactures instructions. If available, procedures for specific

application methods will be included in Pesticide Application by Method section.

1. General Notes:
    a. Change appropriate PPE when working with root control agents.
    b. Open upstream and downstream (if applicable) manhole (a sledgehammer may be needed to loosen the manhole cover) and verify sewer line's diameter and length are consistent with work order.
    c. Assemble chemical root control application equipment according to equipment manufactures instructions.
    d. Prepare chemical root control agent's solutions and mixtures according to chemical manufactures instructions.
    e. Chemical root control agents will be applied according to manufactures instructions.
2. Vacuum Method - RootX:

    For sewer lines 6-inches to 10-inches in diameter that do not exceed 400-feet in length the use a Hydro Jetter truck to create a vacuum to pull RootX down the pipe.

Pipe Length	RootX	Water
Up to 200-ft.	20 lbs.	25 gal.
201 -ft. to 400-ft.	40 lbs.	25 gal.

    a. Assemble the equipment needed at the upstream manhole. You will need one 40 lb. box of RootX and 25-30 gallons of water.
    b. Set up the jetter truck at the downstream manhole. Have the jetter truck operator run a cleaning nozzle up the line far enough to get that vacuum effect going at the upstream manhole. Jetting 1/4 to 1/3 of the way up the line is usually sufficient. Turn off the water pressure.
    c. While the jetter truck setting up downstream, Take the RootX bag(s) out of the box and remove the tie separating the two chemicals, cut a small hole into the narrow side of the bag to allow some air in for mixing.
    d. Firmly grasp both ends of the bag making sure to cover the hole, and slowly rock it back and forth for about a minute to mix the two chemicals together. For RootX to work properly, the chemicals must be completely mixed, creating a uniform gray mixture throughout the bag.
    e. Pour the RootX into the manhole directing it toward the outgoing invert or downstream side. Try to direct as much as possible into the trough as opposed to on the bench. You

want the product to flow down the line and foam up, and not just foam up inside the manhole.

f. Have the jetter truck operator turn on the cleaning nozzle again to create that vacuum effect at the upstream manhole. Once the vacuum effect is achieved add the 25-30 gallons of water to activate the RootX and to get it to flow down the line. Even though the RootX is gone from the manhole continue to add the remaining water to carry the foam down the line.
g. Once the water is poured, the jetter truck operator should turn on the water pressure, and retrieve the jetter hose at a slow rate until the leader hose is showing in the manhole.
h. When the jetter truck operator witness's residual foam at the downstream manhole turn off the water pressure, rinse, and retrieve the cleaning nozzle out of the line.

3. Vacuuming Procedure (when needed):
    a. Inspect the vacuum hose, tubes, and clamps to ensure they are in good working order prior to use.
    b. Attach the vacuum tube(s) to the vacuum hose using the tube clamps. Vibrations from the vacuum can result in accidental opening of the tube clamps. Duct tape may be used to secure the clamp handles if such a concern exists.
    c. Tie a rope to the lowest tube to assist in the lowering and guiding of tubes.
    d. Lower the tube into the manhole using the boom joy stick or remote control.
    e. Place the vacuum tube into channel to vacuum debris.
    f. Continue with line cleaning while vacuuming the channel.
    g. Once the leader hose is visible, lower the water pressure enough to pull the tiger tail up so that it no longer prevents debris from exiting the pipe. While vacuuming, increase the water pressure to push the remaining debris from the pipe into the vacuum tube.
    h. Once you have completed cleaning the sewer line and all debris has been removed from the manhole, remove the vacuum tube.
4. Application Equipment Cleanup:
    a. Turn off and disconnect all application equipment as soon as application is complete. Follow the equipment manufacturers' cleaning instructions. Clean both the inside and outside of the application equipment, including all hoses and nozzles. Do not contaminate nearby bodies of water when disposing of equipment wash water. **Cleaning**

should be performed by or under the supervision of a certified handler.

b. Properly store and secure cleaned application equipment.
c. If using equipment with a large chemical mixing tank return the equipment to the area designated for equipment cleanup and cleans it according to the manufacturer's directions. **Equipment cleaning areas must have provisions for preventing the contaminated water from leaving the area through runoff or percolation into the soil.**
d. Properly store unused chemical following manufacturer's instructions.
e. Report any problems with application equipment, tools, or sewers that were cleaned to the Supervisor.

5. Site Cleanup:
    a. Minor spills or leaks of a few gallons or less can usually be cleaned up easily. Be sure to wear all the PPE required for mixing and loading, including respiratory equipment if odor is persistent. Refer to specific product labeling and Material Safety Data Sheets (MSDS) for cleanup procedures. See Pesticide Leak and Spill Procedures Section for Major Spill Procedures.
    b. If applicable, remove nozzle from sewer line and manhole. (Do not use the hydraulic hose reel to remove nozzle from the line; it will damage the skid and nozzle).
    c. Clean the manhole frame rim.
    d. Document the condition of the manhole.
    e. Close manhole cover.
    f. Ensure manhole cover seals property. Use sealant, tape, or cord, to restore a proper seal as needed.
    g. Replace pick hole corks as needed.
    h. Pick up any tools and secure.
    i. Pick up any debris and dispose in a properly labeled waste container.
    j. Pick up traffic control.
6. Refilling Procedure:
    a. Before connecting to a City hydrant to refill a unit's water tanks, flush the hydrant to remove any sediments (flushing should only last a few seconds).
    b. Staff is only authorized to fill water tanks on collections units from City hydrants located curbside. Staff are not to fill in any private parking lot/drive way.

7. Post Cleaning Tasks:
    a. At the end of the shift a Post Trip Inspection of the unit, its components, tool, and equipment shall be performed and a Vehicle Condition Report completed accurately.
    b. If the vacuum was used, the debris tank shall be emptied at the end of the shift. Liquids shall be decanted in the field into an appropriate manhole or at the RWQCP headworks. Debris shall be dumped at a predesignated location at the RWQCP.
    c. All units shall be stored at the end of the day with their fuel and water tanks full, tools available and secure, cabs cleaned, buckets and baskets emptied, and otherwise left ready for immediate dispatch.
    d. Consult the pesticide label for disposal instructions if you have leftover pesticide materials.
    e. Proper disposal of empty pesticide containers. Leftover pesticides should be kept in tightly closed containers in your storage facility. Always triple rinse empty containers of liquid pesticides Offer empty containers for recycling or reconditioning, or puncture and dispose of in a sanitary landfill. Containers may require inspection by local agricultural commissioner offices before they can be offered for recycling or disposed of in a landfill.
    f. Submit daily work reports to the Supervisor at end of shift.
    g. Schedule a post inspection before the expiration of the chemical's applicable warranty.
8. Post Inspection:
    a. Collect applicable reports filed for the sewer line that requires a post inspection. Verification through CCTV that sewer lines prior to the expiration of the applicable warranty that the chemical root control agents effectively removed the identified roots. Refer to CCTV SOP inspection procedures.

PESTICIDE LEAK AND SPILL PROCEDURES

Major Spill. Cleaning up major spills may be too difficult to handle without professional help. In these cases, keep people away from the spill and confine it if possible. Call the local fire department and the local agricultural commissioner's office for assistance. Decontaminate anyone who contacted the spill and administer first aid if necessary, then arrange for medical help. Authorities may contact CHEMTREC 1 (800) 924-9300 for advice on cleaning up the spill. Do not leave the area until responsible help arrives.

A. REPORTING SPILLS:
   1. Report all major spills by phone to your local Agricultural Commissioner.
   2. Maybe be required to notify other authorities, if:
      a. The spill is on a highway, call the California Highway Patrol.
      b. The spill is on a county or city road, call the county sheriff or city police.
      c. The spill is on a body of water or waterway, the state health department; regional, state, or federal water quality or pollution office and state fish and game/wildlife agency. Determine the chemical type, amount, and application method by reviewing sewer line length and diameter as specified in the work order. If applicable, the following should be considered:

B. SPILL CONTROL:
   1. Prevent further spill by shutting off equipment, righting tipped containers, or catching the leak in a pan or other container.
   2. Prevent the spill from spreading by building a dike of soil, sand, or other absorbent around the spill.
   3. Rope off the area and flag it to keep people away from the spilled chemicals.
   4. Do not leave the spill area unless someone is there to confine the spill and warn of the danger.
   5. If the pesticide was spilled on anyone, immediately follow appropriate decontamination procedures.

C. SPILL CLEANUP:
   1. Use absorbent material such as soil, kitty litter, sawdust, or an absorbent clay to soak up the spill.
   2. Shovel all contaminated material into a leak proof container or chemical resistant bag for disposal. The disposal container must bear a label indicating its contents and the signal word of the pesticide. Dispose of material as you would excess pesticides at a hazardous waste disposal facility.
   3. Do not hose down the area because this spreads the chemical. Always work carefully and do not hurry.
   4. Do not let anyone enter the area until the spill is completely cleaned up.
   5. Refer to the pesticide product safety data sheet (SDS) for information on cleaning up and decontaminating small spill sites.
   6. Foam spill act very similarly to liquids if left unattended because they gradually convert to liquids. Therefore clean up procedures to remove foam from surfaces should begin at once. For instance, foam should be shoveled off planted areas immediately to reduce damage and to prevent foams from liquefying. Clean

areas contaminated with foam with minimal amounts of water. Do not hose foam spills onto planted areas.

a. **Outdoor spill considerations**: Try to pick up the foam as quickly as possible before it liquefies. Scoop foam up with a shovel and transfer it to a manhole or place it into chemical-resistant plastic bags. Empty the foam into a manhole. Triple rinse the bags before disposing of them in a landfill. Place the rinse into the manhole. For spills on the pavement, dispose of the foam in a manhole then rinse the area into the manhole. If the spill occurs on soil remove all contaminated soil and place it in sealed containers and dispose of it in accordance with local regulations.
b. **Indoor spill considerations**: Spills will usually occur in bathrooms, basements, or laundry rooms where drains are connected to sewer lines. Evacuate the building if the pungent, rotten egg or sulfur-like odor of metam-sodium is detected. Open exterior doors and windows and ventilate with fans. Seal all heating and air conditioning vents to prevent contaminating the system. Scoop up foam with shovels or dust pans and place it in plastic bags. Seal the bags and remove them from the building. Dispose of foam in the nearest manhole. Triple rinse the plastic bags and disposes of them in a landfill. Pour rinse into the manhole. On hard floors wipe up remaining liquid with rags or other absorbent material and dispose of as directed by local regulations. Wash the floor at least three times with detergent, flushing each down a drain. If rugs or cloth materials become wet with foam, take them outside if possible and dry them before laundering separately. On carpeting use a wet vacuum and flush foam down the drain. Shampoo with detergent at least three times. Ventilate area and allow to dry. If odor persists remove and replace the contaminated material.

CIRCUMSTANCES REQUIRING SPECIAL CONSIDERATION / PRIOR AUTHORIZATION

<u>Shooting Backwards</u>

Some circumstances such as heavy traffic, busy intersections, access to a downstream manhole, and etc. may necessitate cleaning a line with the direction of wastewater flow (shooting backwards). In the event the operator wishes to attempt to clean with the flow, prior verbal approval shall be received from the assigned Wastewater Collections System Crew Leader or Senior. **At no time shall inconvenience or general ease be justification for shooting backwards.**

Shooting Without a Skid

In some instances staff may need to clean a line without using a cage. In the event the operator wishes to attempt to clean with no skid, prior verbal approval shall be received from the assigned Wastewater Collections System Crew Leader or Senior.

Nozzle Stuck in a Line

In the event a nozzle becomes stuck in a sewer line, and the operator is unable to quickly and safely remove it, notification shall be provided to the assigned Wastewater Collections System Crew Leader within 30 minutes. Upon receipt of notification, the Crew Leader shall work with the operator to recover the nozzle and/or elevate the issue through the senior for assistance.

Work in High Traffic Areas

Work in high traffic areas, which include but are not limited to, Van Buren, Alessandro, Chicago, Central, Columbia, and etc. require special advance planning in regard to time of day and traffic control. Work in these areas shall not commence until the assigned Wastewater Collection System Crew leader, working with the crew and scheduler, has presented a work plan to, and received approval from the Supervisor.

Work on Private Property

Staff are not authorized to drive on private property or sidewalks unless there is a sewer or storm drain easement or public right of way. Should staff need to drive on private property to perform their duties, prior email authorization from the Senior or Supervisor is required.

- Should staff need to move about or work in close proximity to private property, staff should diligently attempt to contact the property owner to inform them of their presence and the work being performed. Staff shall take before and after work pictures of the work area and points of ingress and egress.

Staff are encouraged to contact the Wastewater Mechanical Supervisor (Collections) should there be any questions or clarification concerning this Standard Operating Procedure.

City of Riverside Public Works Department

UPDATE OF THE INTEGRATED

MASTER PLAN FOR THE WASTEWATER COLLECTION AND TREATMENT FACILITIES

VOL. 9

CHAPTER 6

Additional Special Collection System Studies

SSMP Update

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City of Riverside Public Works Department

Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities

VOLUME 9: ADDITIONAL SPECIAL COLLECTION SYSTEM STUDIES

CHAPTER 6: SSMP UPDATE

FINAL | June 2019

City of Riverside Public Works Department
Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities

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CHAPTER 6: SSMP UPDATE

Carollo Project No. 10495A00

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Chapter 6

SSMP UPDATE

6.1 Purpose

The purpose of this Chapter is to summarize the recommendations to the City's SSMP. These recommendations ensure the SSMP is consistent with the City's existing Master Plan, as well as with the tasks performed as part of Volume 9, Additional Special Collection System Studies. The City has recently commissioned the completion of a "gap analysis" or an evaluation of the City's SSMP against the WDR order. That analysis examines the systemic factors that have contributed to or caused a gap between the current state of the system and the future or desired state outlined in the WDR order. Any recommendations made to adjust the SSMP in light of that gap analysis are outside the scope of this Chapter, but are referenced in Section 6.2 for clarity and context.

This Chapter is intended to exclusively address the recommended changes to the City's SSMP to satisfy the requirements of the River Watch Agreement between the California River Watch and the City. The City has acknowledged the recommendations made in this Chapter, including those referenced in Section 6.2.

6.2 Recommendations to be Implemented by the City

The City's 2016 SSMP set the following five goals for meeting the minimum requirements of the WDR order:

1. Minimize the frequency of SSOs.
2. Appropriately mitigate the impacts caused by SSOs.
3. Provide notifications and reports to all required regulatory agencies in a timely manner.
4. Effectively manage, operate, maintain, and improve the collection system.
5. Provide education and outreach to the general public to increase awareness of the sanitary sewer system, its function, and operation.

The SSMP recommendations were based on an overall review of the City's SSMP, Sewer Master Plan, discussions with the Public Works Wastewater Division Maintenance Section, and a review of all other documents provided to our team by the City. It was concluded that all of these goals have been initiated by the City, but still need additions and refinements. Below summarizes the recommended SSMP update:

1. The City should consider adding two more goals to the City's list to cover the full spectrum of the WDR order. These two additional goals are:
    a. The City sewer system operators, employees, contractors, responders, or other agents are adequately trained and equipped to address an SSO event.
    b. The City sewer system is properly designed, constructed, and funded to provide sufficient capacity to convey base flows and peak flows while meeting or exceeding applicable regulations, laws, and generally acceptable practices relative to sanitary sewer system O&M.

2. The City should add ordinances that would strengthen its overall municipal code in WDR enforcement and compliance. These include adding sections addressing I/I, design issues and standards, and FOG.
3. In terms of overall O&M, the City should leverage its GIS technology more by the use of automated GIS Applications, both for field use and office use.
   a. The City should utilize a Predictive Maintenance Program including planned and scheduled inspection and rehabilitation of its sanitary sewer system. These would include "Hot Spots" identification in GIS trend analysis utilizing the cleaning schedule. The City has done a good job establishing a Key Performance Indicator for cleaning its sewer system. This information, however, is not readily accessible by field and office staff.
   b. Use of a GIS application that connects both the as-built and the CCTV video(s) to each sewer line will streamline functionality for City staff. Additionally, this application can also be utilized on a tablet by field staff to red line and relay field updates to GIS staff on a regular basis.
4. The City should develop and adopt a residential FOG program. Examples include developing a web page which describes oil and grease disposal best management practices for residential users. In addition to general public education, targeted public education should be conducted at select locations that have been identified by Sewer Maintenance crews as potential heavy FOG sources based on the problem pipes list.
5. Understanding the holistic health and history of a collection system asset in the field can be accomplished by a partnership between the City's existing CMMS and GIS systems. The City should evaluate and develop a method for incorporating the two systems into a single City-wide asset. Spatially tracking asset performance indicators, condition assessment, maintenance history, SSO's, FOG complaints, etc. would efficiently and automatically track personnel, equipment, and materials.
6. The City should implement the current CIP within the recommended schedule.
7. The City should develop a program that focuses on collecting data from all relevant sources, which will provide the City with critical information regarding the performance of the City's sanitary sewer system and associated programs. It is our recommendation that this system be integrated with GIS to help with trend analysis for Hot Spots, FOG, and SSO mapping, as well as CIP tracking. Furthermore, a system for communication and data submittals that are associated with SSOs and sewer backups that are reported to the online SSO database should be developed. A matrix of key performance indicators should be developed that would help the City develop its MMRPs.
8. The City should develop an audit program that addresses the following:
   a. Document Control.
   b. Training.
   c. Targets and Objectives.
   d. Data Management.
   e. Documented Procedures.
   f. Outcomes.
9. The City should create a plan and schedule the implementation of a comprehensive public communication and educational program.

6.3 River Watch Agreement

This section documents the recommended updates so that the SSMP is consistent with the additional collection system studies completed pursuant to the River Watch Agreement between California River Watch and the City. This section is organized by the individual studies and the SSMP recommendations that came from those studies.

6.3.1 Sewers and Manholes in Close Proximity to Waters of the United States

This section summarizes recommended SSMP updates as a result of Volume 9, Chapter 2, Sewers, and Manholes in Close Proximity to Waters of US. However, not all of these recommendations are stated in Volume 9, Chapter 2. These recommendations are to help the City manage the information collected in Volume 9, Chapter 2, and to manage future work.

- Operations and Maintenance Program section of the SSMP:
  - Sewer Maps:
    - The City should regularly update their GIS system and move towards full integration between the City-wide CMMS and GIS systems. It is recommended that the City adds fields to track the following information in their GIS database to better understand their system's overall condition and performance:
      - Most recent inspection date and who conducted the inspection.
      - Date when next inspection must be completed by as required by the River Watch Agreement.
      - Most recent PACP structural quick rating and O&M quick rating scores.
      - Notes that highlight key structural and O&M defects.
      - Most recent O&M date and a summary of the work performed.
      - Date of next scheduled O&M.
      - High frequency preventative maintenance schedule and recommended O&M.
      - Did an SSO occur at the location? If so, when?
      - Date and reason for any renewal projects completed for the asset, if applicable.
      - Date and reason for any scheduled renewal project.
    - GIS should be updated in a timely manner (and in the order received) when as-built drawings, inspection reports, condition assessments, or work order are submitted.
  - Preventative Maintenance:
    - Flag any gravity mains or manholes with a PACP O&M grade greater than or equal to three as "requiring high frequency preventative maintenance." The method, frequency, and duration of preventative maintenance are to be determined using the most recent condition assessment of the asset.
    - The City should perform a condition assessment of all gravity mains and manholes at least every 10 years. Assets repaired or replaced within the last 10 years should be inspected within 10 years after the work was completed.
  - Rehabilitation and Replacement Plan:
    - In the Operation and Maintenance Program section, Rehabilitation and Replacement Plan, revise the second paragraph to read: "A gravity main with a PACP grade of four or five must be repaired or replaced within 10-years of the condition assessment. A gravity main with a PACP grade of three shall be

repaired or replaced within 10-years of condition assessment if such defect resulted in an SSO, or, if in the City's discretion. Engineering staff shall attend regular Utility Coordination Meetings to coordinate construction between sewer, street, and utility projects."

- Overflow Emergency Response Plan section of the SSMP:
  - Update to include notification of appropriate department(s) of the gravity mains and manholes where an SSO occurred.
- FOG Control Program section of the SSMP:
  - FOG Problem Areas and Maintenance Schedule:
    - Update to include frequent updates of FOG problem areas using most recent inspection findings.
- Earlier recommendations of integrating the City-wide CMMS system with the GIS system will help the City develop its Monitoring, Measurement, and Program Modifications. Relevant data stored on a central database provides critical information associated with the performance of the City's sanitary sewer system and trends.

6.3.2 SSO Reporting and Response

This section summarizes recommended SSMP updates as a result of Volume 9, Chapter 3, SSO Reporting and Response.

- Add the Overflow Emergency Response Plan (OERP) to the Appendix of the SSMP.
- In the Organization section, Table 2, "Item VI. Overflow Emergency Response Plan", add the following:
  - F. Overflow response program
  - G. Overflow notification procedures
  - H. Overflow Emergency Response Plan procedures.
- In the Monitoring, Measurement, and Program Notifications section, Maintain Information, consider tracking the following data and updating this list accordingly:
  - Break down SSOs into Category 1, Category 2, and Category 3.
  - Percent of SSO volume either contained or returned to the sewer.
  - Critical asset failures.
  - Break down SSO cause into pump station failure, pipe failure, FOG, roots, wet weather, and capacity limitations.

6.3.3 Chemical Root Control SOP

This section summarizes recommended SSMP updates as a result of Volume 9, Chapter 5, Chemical Root Control SOP.

- In the Operation and Maintenance section, Preventive Maintenance, update to include that Collection System staff will use City's SOPs when completing preventive maintenance. Also reference where the Collection System staff can obtain the most up to date SOPs.
- In the Operation and Maintenance section, Preventive Maintenance, update to include relevant records of assets along the scheduled cleaning route to ensure appropriate O&M activities are completed prior to a work order being sent to staff.