



Western Refining Southwest LLC

A subsidiary of Marathon Petroleum Corporation

I-40 Exit 39
Jamestown, NM 87347

September 30, 2021

Mr. Kevin Pierard, Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

RE: Heat Exchanger Bundle Pad Investigation Work Plan
Marathon Gallup Refinery
(dba Western Refining Southwest LLC)
EPA ID# NMD000333211

Dear Mr. Pierard,

Attached please find the Investigation Work Plan for the Heat Exchanger Bundle Pad as requested in the New Mexico Environment Department (NMED) Disapproval Annual Groundwater Monitoring Report Gallup Refinery – 2019, comment 46, dated November 23, 2020.

A timeline of the regulatory communication related to the Heat Exchanger Bundle Pad Investigation Work Plan Development is presented below:

- Disapproval Annual Groundwater Monitoring Report Gallup Refinery – 2019, received November 23, 2020
- Extension Request, submitted April 30, 2021

If you have any questions or comments regarding the information contained herein, please do not hesitate to contact John Moore at (505) 879-7643.



Western Refining Southwest LLC

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I-40 Exit 39
Jamestown, NM 87347

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction of supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,
Western Refining Southwest LLC, Marathon Gallup Refinery

Ruth A. Cade

Ruth Cade
Vice-President

Enclosure

cc: D. Cobrain, NMED HWB M. Suzuki, NMED HWB
 L. Barr, OCD G. McCartney, MPC
 K. Luka, MPC J. Moore, Gallup Refinery
 H. Jones, Trihydro Corporation

Heat Exchanger Bundle Pad Investigation Work Plan



**WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY**

Gallup, New Mexico

EPA ID# NMD000333211

SEPTEMBER 2021



Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

Executive Summary

The Marathon Gallup Refinery is submitting this work plan for soil investigation in the vicinity of the Heat Exchanger Bundle Pad (Bundle Pad). The New Mexico Environment Department (NMED) commented on elevated benzene concentrations in groundwater at monitoring well MKTF-16 in Comment 46 from the *Disapproval Annual Groundwater Monitoring Report Gallup Refinery – 2019* (dated November 23, 2020), which suggested the benzene source could be from leaks in the process sewer line near the Bundle Pad. Specifically, NMED Comment 46 requested an investigation into the integrity of the sewer lines in the area of the Bundle Pad.

Based on February 2020 process sewer video/photo inspections and March 2021 dye tests conducted near the Bundle Pad sewer, no sewer integrity issues were identified. The proposed work plan will investigate the presence of elevated concentrations of benzene in monitoring well MKTF-16 by installing and sampling soil borings in the vicinity of MKTF-16 and around the Bundle Pad. Soil boring samples will be collected using a geoprobe direct-push drill rig and analyzed for benzene.



Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

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- B. BUNDLE PAD SEWER DYE TEST – PHOTOGRAPHS
- C. SOP – SOIL SAMPLING
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Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

List of Acronyms

amsl	above mean sea level
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylene
COC	chain of custody
ft	feet
NMED	New Mexico Environment Department
PID	photoionization detector
QA/QC	Quality Assurance / Quality Control
SSL	soil screening level



Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

Introduction

The Western Refining Southwest, LLC., D/B/A Marathon Gallup Refinery (the Refinery) is located approximately 17 miles east of Gallup, New Mexico along the north side of Interstate Highway I-40 (Figure 1). The physical address is I-40, Exit #39 Jamestown, New Mexico 87347. The Refinery property covers approximately 810 acres.

This work plan is for the investigation of soils around the Heat Exchanger Bundle Pad (Bundle Pad) and monitoring well MKTF-16. The New Mexico Environment Department (NMED) commented on elevated benzene concentrations in groundwater at monitoring well MKTF-16 in Comment 46 from the *Disapproval Annual Groundwater Monitoring Report Gallup Refinery – 2019* (dated November 23, 2020), which suggested the benzene source could be from leaks in the process sewer line near the Bundle Pad. Specifically, Comment 46 requested an investigation into the integrity of the sewer lines in the area of the Bundle Pad. Based on February 2020 process sewer video/photo inspections (Appendix A), no sewer integrity issues were identified. On March 19, 2021, a dye test was performed at the Bundle Pad sump. The inlets and outlet of the Bundle Pad sump were plugged and green fluorescent dye and water were added to fill the sump (photos included as Appendix B). The sump was inspected 24 hours later, Saturday, March 20, and no decrease in fluid level was noted.

This work plan will investigate the potential source of elevated benzene concentrations in monitoring well MKTF-16 by collecting soil samples from soil borings in the vicinity of MKTF-16 and near the Bundle Pad. Soil samples will be collected using a geoprobe direct-push drill rig and analyzed for benzene.

Site Conditions

The Refinery has been indefinitely idled since August 2020. Historically, the Refinery generally processed crude oil transported to the facility by pipeline or tanker truck. While operating, various process units were operated at the Refinery including crude distillation, reformer, fluidized catalytic cracker, alkylation, sulfur recovery, merox treater, and hydrotreater units. Refinery operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

Surface Conditions

Local site topographic features include high ground in the southeast gradually decreasing to a lowland fluvial plain to the northwest. Elevations on the refinery property range from 6,860 feet (ft) above mean sea level (amsl) to 7,040 ft amsl. The Bundle Pad area is approximately 6,951 ft amsl.

Subsurface Conditions

The shallow subsurface soil (alluvium) is comprised of clay and silt with some inter-bedded sand layers. Beneath the alluvium is the Petrified Forest Member of the Chinle Group, which primarily consists of interbedded mudstone, siltstone, and sandstone. The Alluvium/Chinle interface is as little as 15 ft below ground surface (bgs) to over 32 ft bgs.



Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

Scope of Activities

The investigative activities detailed in this work plan will be completed to gain knowledge of the subsurface in the area of the Bundle Pad and help identify the source of benzene found in MKTF-16. Pending NMED approval, the Refinery anticipates investigation work to be completed during 2021.

Soil borings will be completed with a geoprobe direct-push drill rig at eight locations around the Bundle Pad to a total depth of 15 ft bgs (Figure 2). Soil borings will be screened in the field for presence of volatiles using a photoionization detector (PID). The total depth of the Bundle Pad sump and process sewer line in this area is approximately 12 ft bgs. Soil samples will be collected from 12 ft bgs, the bottom of the boring, and at depths where field screening indicates potential impacts. Soil samples will be analyzed for benzene via Method 8260B. Analytical results will be compared to NMED Industrial Soil Screening Levels (SSL).

Figure 2 also includes the proposed soil boring/sample locations for the Sour Naphtha Release Investigation. There are seven proposed borings from the intersection northwest of the Bundle Pad to MKTF-16. These sample locations have been proposed in the *Sour Naphtha Release Investigation Work Plan* to determine if the elevated benzene concentrations found in MKTF-16 are related to the 2017 Sour Naphtha release. The samples collected in the Sour Naphtha Investigation will include benzene and pertinent results will be reported alongside the Bundle Pad investigation results.

Investigation Methods

Soils obtained will be visually inspected and classified in general accordance with American Society for Testing and Materials D2487 (Unified Soil Classification System) and D2488 (Description and Identification of Soils). Detailed boring logs will be compiled in the field by qualified staff. Samples will be field screened using a PID for evidence of organic volatiles. PID results will be recorded on the boring logs and used to determine additional sample intervals.

Sample Collection Procedures

Samples will be collected in accordance with the soil sampling Standard Operating Procedure (Appendix C). Details related to sample collection will be documented on the boring log field forms (Appendix D). General observations recorded on the field forms for each soil sample location will include sampling start and end times, weather, site conditions, sampling team members, and other personnel present. Sample-specific information will include field sample identification, time of sample collection, sample start and end depth, collection method, sample type (i.e., composite or aliquot), soil classification and characteristics, any deviations from or clarification of sampling procedures, and other observations.

PID readings will be collected on intervals corresponding with sample collection. Headspace vapor screening targets volatile organic compounds and involves placing a soil sample in a plastic sample bag allowing space for ambient air. The container will be sealed and then shaken gently to expose the soil to the air trapped in the container. The sealed container will be allowed to rest while vapors equilibrate.



Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

Vapors present within the sample bag's headspace will then be measured by inserting the probe of the instrument in a small opening in the bag. The maximum value and the ambient air temperature will be recorded on the field boring or test pit log for each interval. Note that if samples are cold (i.e., below 32 degrees Fahrenheit) they will be sealed in airtight bags and warmed in a heated building and/or vehicle before screening.

After collecting the PID reading, sample jars will be filled, labeled, and placed in a cooler. Before shipment, each cooler will be packed with ice and a laboratory-provided trip blank. A chain of custody (COC) form will accompany each sample shipment. Coolers will be sealed and delivered to Hall Environmental Laboratories (Hall). A summary of the proposed sampling activities is provided below:

1. Installation of eight soil borings, visual screening/logging, collection of PID readings for evidence of impacts, and collection of soil samples. Samples will be collected from:
 - 12 ft bgs (approximate depth of Bundle Pad sump and process sewer line)
 - The bottom of boring
 - Any additional intervals where field screening indicate impacted soils.
2. Submit samples to Hall to be analyzed for benzene by Method 8260B.
3. Compare analytical data with applicable NMED Industrial SSLs.

Data Quality and Validation

Quality assurance/quality control (QA/QC) samples will be collected during sampling to monitor the validity of the sample collection procedures. Field duplicates will be collected at a rate of 10% or at a minimum of 1 per day. Equipment blanks will be collected from re-usable equipment at a rate of 10% at a minimum of 1 per day. One trip blank per cooler will accompany the samples to the laboratory. The field duplicates, equipment blank samples, and trip blanks will be submitted to the laboratory along with the soil samples. QA/QC samples will be recorded on the field forms and COCs. All data will undergo Tier II data validation.

Data Evaluation and Waste Management

The soil analytical results will be compared to applicable NMED Industrial SSLs. The results will be presented to NMED in an investigation report. Soil recovered during sampling will be placed in drums, labeled, and stored on the 90-Day Pad. Waste characterization will be conducted prior to disposal. Waste characterization analysis will include testing for Method 8260 - volatile organic compounds, Method 8270 - semi-volatile organic compounds, and Resource Conservation and Recovery Act-8 Metals. Any waste determined to be hazardous will be disposed of within 90 days.



Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

Schedule

Pending NMED approval, the Refinery anticipates the investigation to be completed during 2021. Once the investigation has been completed, the Refinery will prepare an investigation report summarizing the sampling results and investigation conclusions within 120 days of the receipt of the analytical data.

References

Marathon. 2021. Sour Naphtha Release Investigation Work Plan, Western Refining Southwest LLC, Marathon Gallup Refinery, EPA ID #NMD000333211. September.

New Mexico Environment Department (NMED). 2020. Disapproval Annual Groundwater Monitoring Report Gallup Refinery – 2019. Western Refining Southwest LLC, Marathon Gallup Refinery, EPA ID #NMD000333211, HWB-WRG-20-013. November 23.



Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

Figures

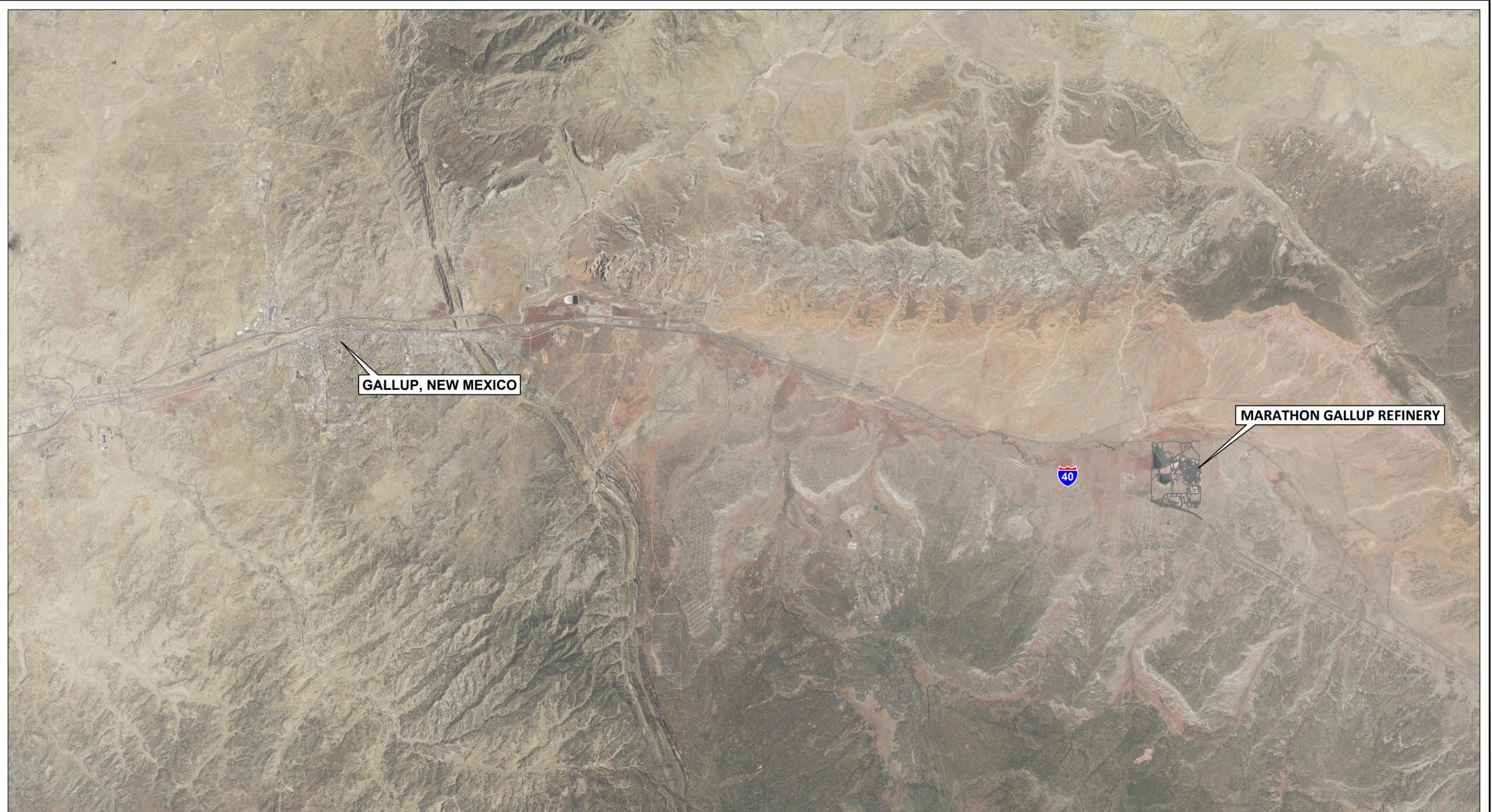


Image Cite: National Agriculture Imagery Program (NAIP) Colored Orthophoto, Mckinley County, New Mexico, Publication: 2014

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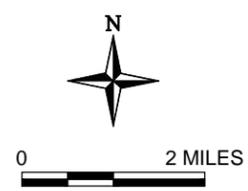


NEW MEXICO

QUADRANGLE LOCATION

NOTE:
 SITE LEGAL DESCRIPTION -
 TOWNSHIP 15 NORTH,
 RANGE 15 WEST, SECTION 33

EXPLANATION
 INTERSTATE HIGHWAY




1252 Commerce Drive
 Laramie, Wyoming 82070
 www.trihydro.com
 (P) 307/745.7474 (F) 307/745.7729

FIGURE 1

SITE LOCATION MAP

WESTERN REFINING SOUTHWEST, LLC
MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: JP	Scale: 1" = 2 MILES	Date: 9/7/2021	File: 697-BP-SITELOC-202109
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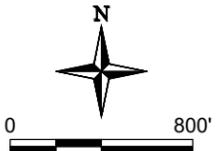
Image Cite: USDA /fsa - Aerial Photography Field Office, NAIP MrSID - Publication: 2014

2 PROPOSED SOIL BORING LOCATIONS
SCALE: 1" = 30'



Image Cite: USDA /fsa - Aerial Photography Field Office, NAIP MrSID - Publication: 2014

1 KEY MAP
SCALE: 1" = 800'



EXPLANATION

- MKTf-16 CHINLE/ALLUVIUM INTERFACE WELL AND DESIGNATION
- PROPOSED BUNDLE PAD INVESTIGATION SOIL BORING LOCATION
- PROPOSED SOUR NAPHTHA INVESTIGATION SOIL BORING LOCATION
- MANHOLE LOCATION
- SEWER LINE
- PROCESS SEWER LINE
- BUNDLE PAD SUMP
- TANK

Trihydro
CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307.745.7474 (F) 307.745.7729

FIGURE 2
HEAT EXCHANGER BUNDLE PAD INVESTIGATION
PROPOSED SOIL BORING LOCATIONS
WESTERN REFINING SOUTHWEST, LLC
MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: PH	Scale: AS SHOWN	Date: 5/12/21	File: 697-BP-SOILLOCS-202109
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Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

Appendix A - Process Sewer Inspection Report



Insta-Pipe

2520 50th Avenue SW,
Tumwater, WA 98512

Remote Visual and Cleaning Inspection



FACILITY:
Gallup, New
Mexico



B. James
Inspector

Brad Roberts
Inspector

Remote Visual Inspector
Title

Remote Visual Inspector
Title

Kelly Caillier
Report Prepared By

B. James
Inspector Sign Off

Kelly Caillier
Engineering

Client Sign Off

Reliability Engineer
Title

2.10.2020
Date

2.10.2020
Date

Date

Inspection Type: RVI INSPECTION
Equipment Name: Process & Storm Water Lines

Inspection Date: 1.2020
Report Revision: 1

Inspector: B.James/Brad Roberts



RVI ANALYSIS NAVIGATION INSTRUCTIONS

Located inside of your RVI analysis is a navigation system installed for ease of quickly moving around the analysis without the need for scrolling. Beginning on the cover page, mouse clicking on the

symbol  will navigate to the first page of the Asset Maps. While on any of the summary pages (Pages 8 & 9 of analysis), mouse clicking on the  will bring the user to the reflective asset detail page of the analysis. While on this page mouse clicking anywhere on the page will navigate to the drawing details report, where any PACP findings can be viewed in detail. To arrive in the same location from the summary, mouse clicking on the  symbol will navigate directly to the assets detailed PACP finding drawing. A couple of the assets in this report have photographs only. By mouse clicking on the  icon, this action will lead you directly to the photographs associated with the asset. Lastly, by clicking on the

Insta-pipe  logo anywhere in the analysis, this action will navigate back to the summary page.

CATEGORY STRUCTURE

The Analysis was also built with a five (5) level asset current condition category structure for ease of viewing and future planning. They are as follows:

1. **Category 1 Assets:**
 - a. Definition: PACP Code Defect Exist (Highest Probability of Failure Assets)
2. **Category 2 Assets:**
 - a. Definition: RVI Inspector abandoned survey due to excess debris, material, or water.
3. **Category 3 Assets:**
 - a. Definition: RVI Inspector abandoned survey due geometry challenges of the system.
4. **Category 4 Assets:**
 - a. Definition: RVI Inspector was able to complete entire survey.
5. **Category 5 Assets:**
 - a. Definition: Unknown Lines - No Survey, Only Map and Photographs.



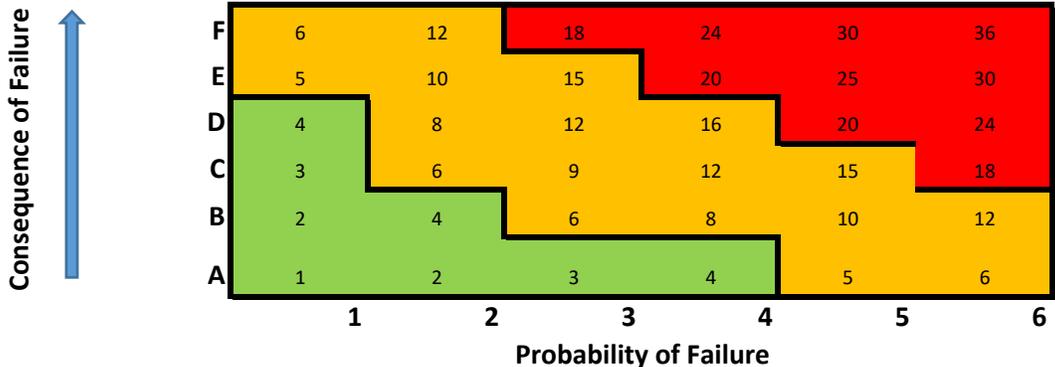
Risk Based Inspection Methodology Introduction

The Analysis was built with an introduction to Risk Modeling and utilizing the tool for possible future scheduling and budget preparation. There are many facets and models incorporated into a reliable risk model implementation. Insta-Pipe's experience level with this implementation is unmatched. Below is an introduction and beginning model comparable to the values implemented in the report.

Note 1: Taking advantage of resinspection dates in place of risk values can be installed into this model for scheduling and budgeting purposes based on Risk Dynamics of the Asset condition is highly recommended after a deeper study into Marathon Asset focus.

NOTE 2: The goal of this implementation is sustainability of all assets in a balanced manner.

Increase Aggressiveness of Assessment



Increase Aggressiveness of Rehabilitation

Matrix 1

If further discussion on the implementation of the Asset Risk Module or any of the values in this analysis is needed, please do not hesitate to request further information.

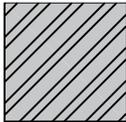
Sincerely,

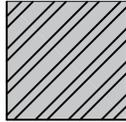
Kelly P. Caillier, CRE

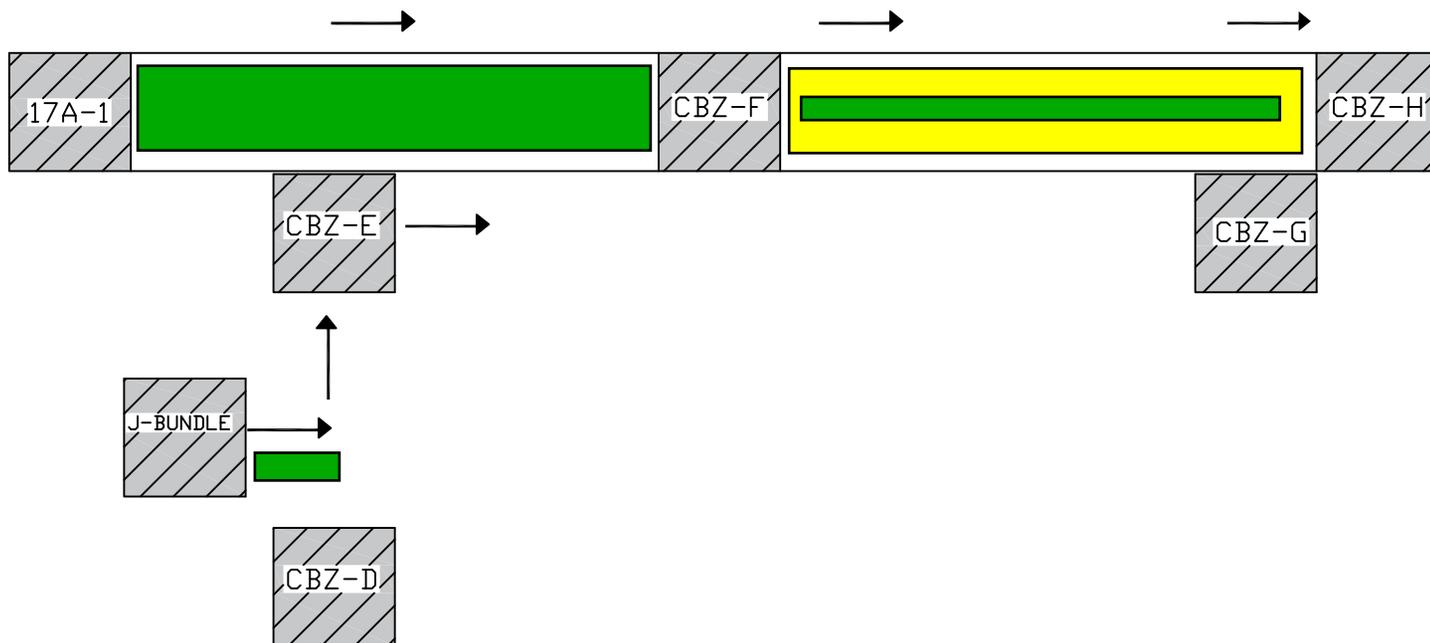
INSPECTION MAP OVERVIEW

→ NORTH

JETTER UTILIZED
CRAWLER VIDEO

 UNKNOWN PROCESS 1

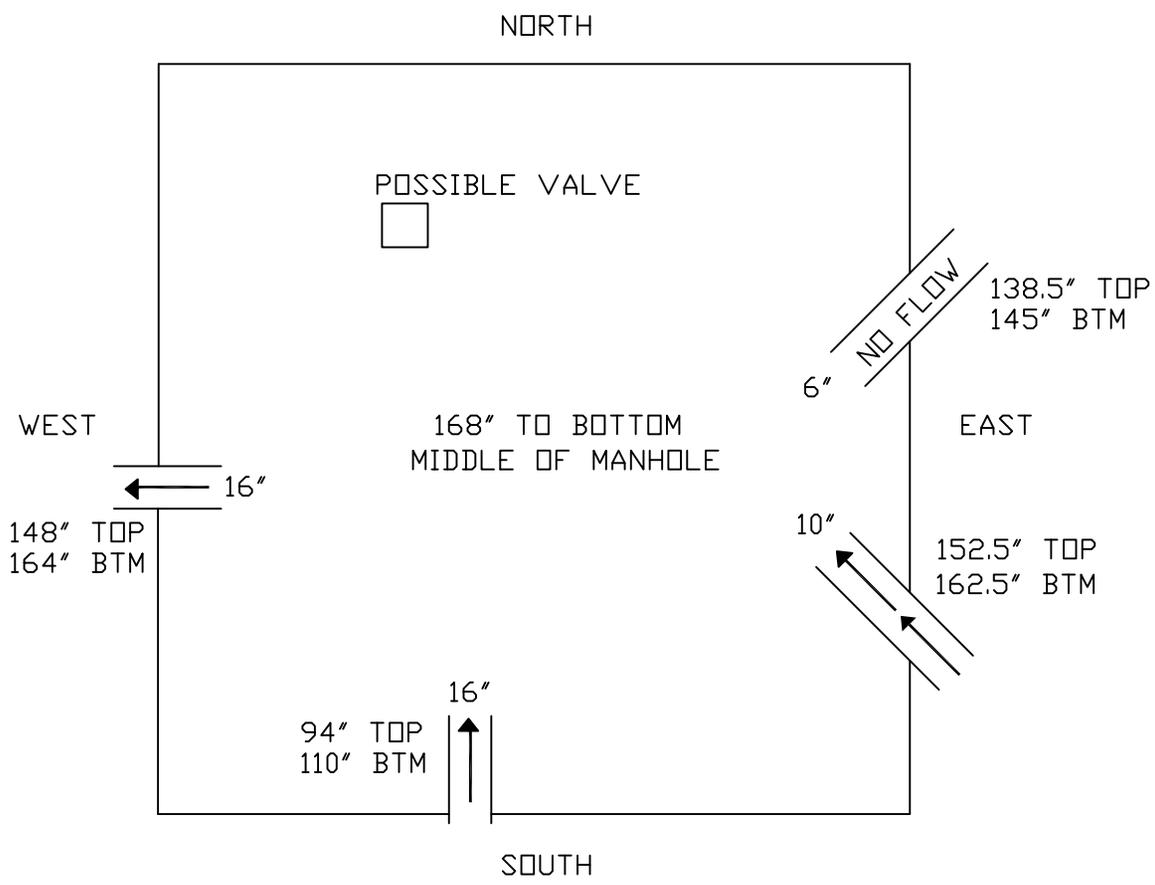
 UNKNOWN STORM 1



REVISIONS			
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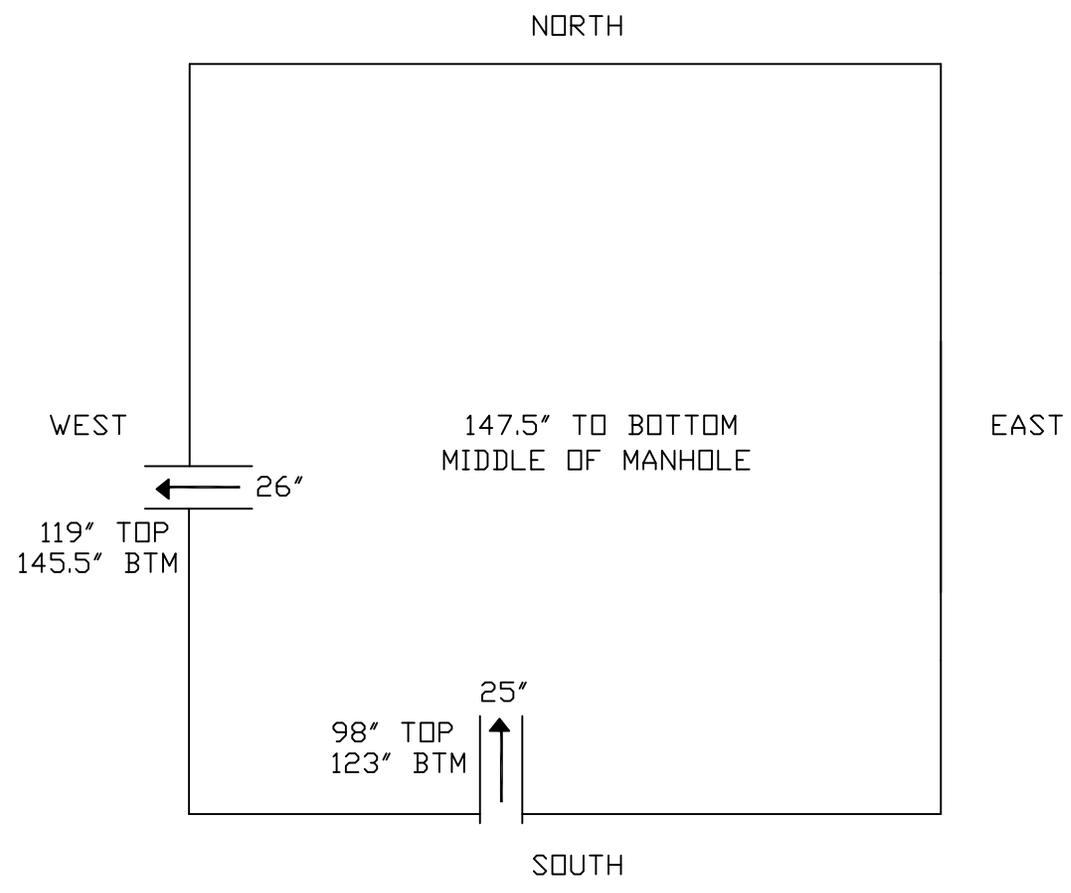
MANHOLE CBZ-G



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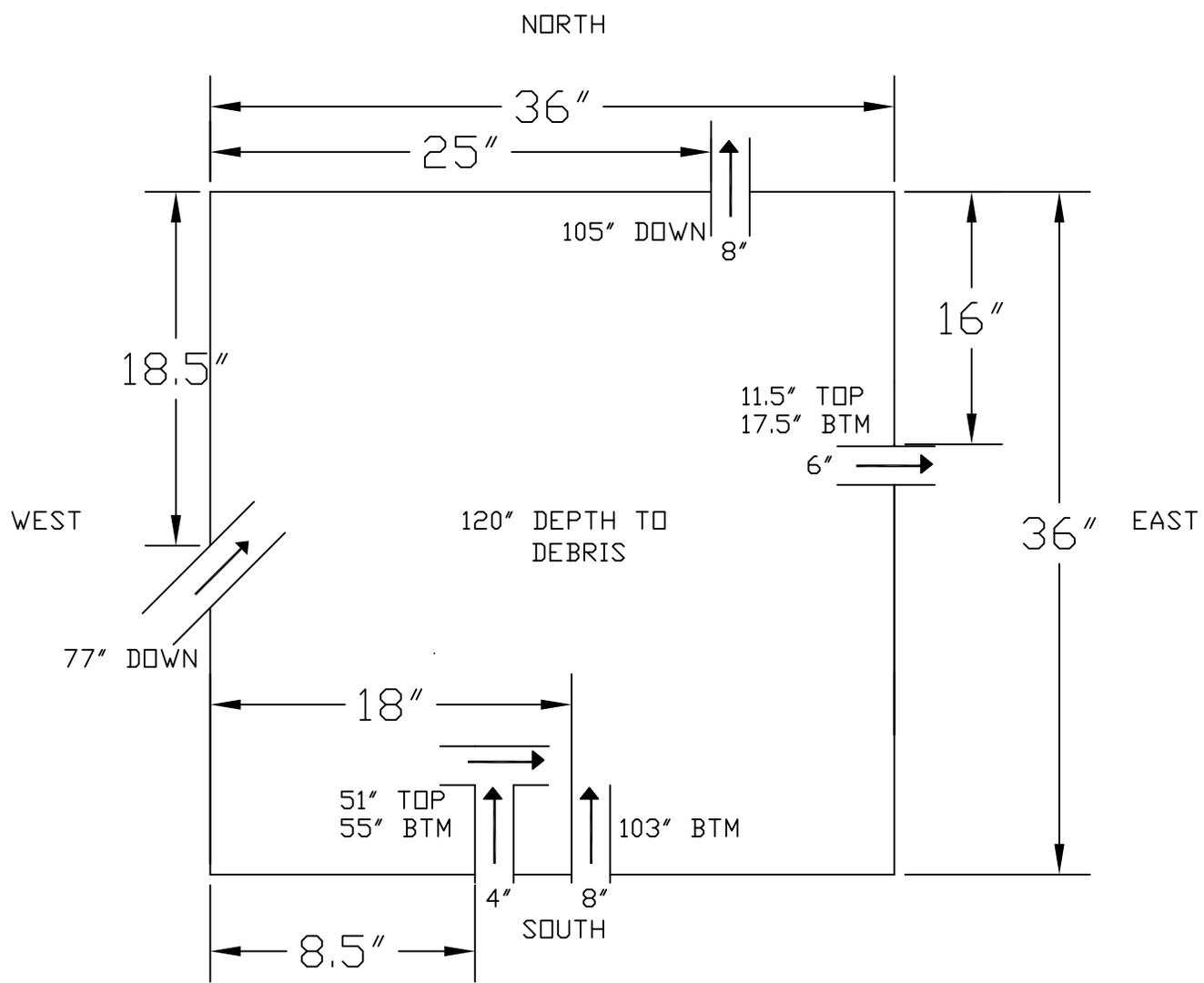
MANHOLE CBZ-H



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MANHOLE J-BUNDLE PAD



REVISIONS			
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RVI INSPECTION CAMPAIGN
Gallup New Mexico Facility
Process and Stormwater Systems



Component Type	Component Identification	WGS84 Coordinates	Component Description	Campaign Date	Survey Length (FT)	Risk Ranking	PACP Findings
----------------	--------------------------	-------------------	-----------------------	---------------	--------------------	--------------	---------------

Category 1 Assets: PACP CODE DEFECT EXIST

During the Jan 2020 Survey No PACP defects exist

Category 2 Assets: ABANDONED SURVEY DUE TO EXCESS DEBRIS, MATERIAL OR WATER

PolyVinyl Chloride	CBZ-E towards CBZ-F  		UP: CBZ-E Down: CBZ-F Street: Bundle Pad	1.28.2020	3.0*	*E	M
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Category 3 Assets: ABANDON SURVEY DUE TO GEOMETRY OF SYSTEM

Ductile Iron Pipe	J-Bundle Pad towards CBZ-E  		UP: JBP Down: CBZ-E Street: Bundle Pad	1.29.2020	71.7	1E	M
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Category 4 Assets: NO DEFECTS EXIST & SURVEY COMPLETE

PolyVinyl Chloride	17A-1 towards CBZ-E  		UP: 17A-1 Down: CBZ-E Street: Bundle Pad	1.29.2020	12.0	1E	
Ductile Iron Pipe	Bundle Pad towards CBZ-E  		UP: Bundle Pad Down: CBZ-E Street: Bundle Pad	1.28.2020	66.0	1E	
PolyVinyl Chloride	CBZ-F towards CBZ-G  		UP: CBZ-F Down: CBZ-G Street: Bundle Pad	1.28.2020	421.6	1E	
Ductile Iron Pipe	CBZ-G towards CBZ-H  		UP: CBZ-G Down: CBZ-H Street: Bundle Pad	1.30.2020	12.0	1E	

PACP FINDINGS INDEX

S	Structural	H	Hydraulics	C	Constructional
M	Miscellaneous	O	O & M	*	Incomplete



RVI INSPECTION CAMPAIGN
Gallup New Mexico Facility
Process and Stormwater Systems



Component Type	Component Identification	WGS84 Coordinates	Component Description	Campaign Date	Survey Length (FT)	Asset Size	PACP Findings
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Category 5 Assets: Unknown Lines - No Survey

Unknown Component	Process Line  		Unknown	1.30.2020	N/A	N/A	_____
Unknown Component	Storm Water Line  		Unknown	1.30.2020	N/A	N/A	_____

PACP FINDINGS INDEX

S	Structural	H	Hydraulics	C	Constructional
M	Miscellaneous	O	O & M	*	Incomplete

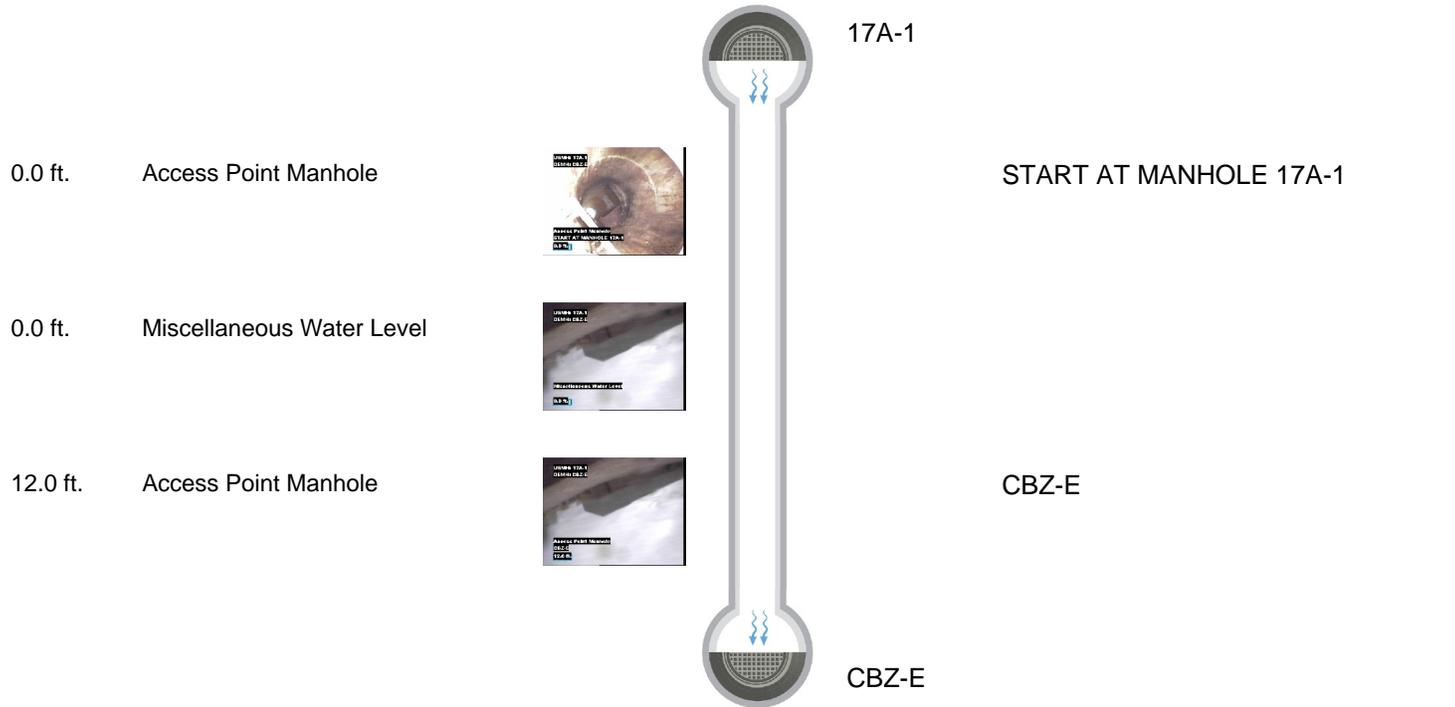


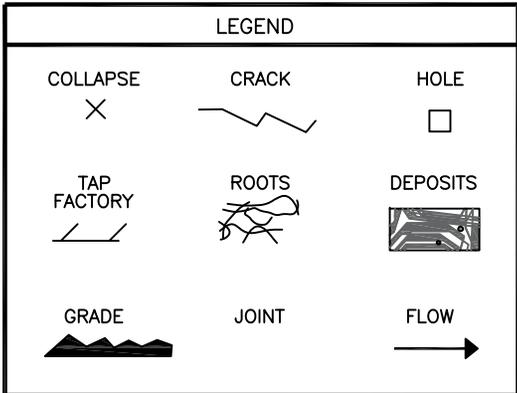
IT pipes
 4921 Alexander Blvd
 Albuquerque, NM
 505-341-0109

Defect Listing Plot with Images

Pipe Segment Refere...	City GALLUP	Street BUNDLE PAD	Material PolyVinyl Chloride		Location C...	Pipe Use Stormwater
Upstream MH 17A-1	Total Length	Year Constructed	Shape Circular		Location Details	
Downstream MH CBZ-E	Length surveyed 12	Year Renewed	Height 16	Width 16	Pipe Joint...	

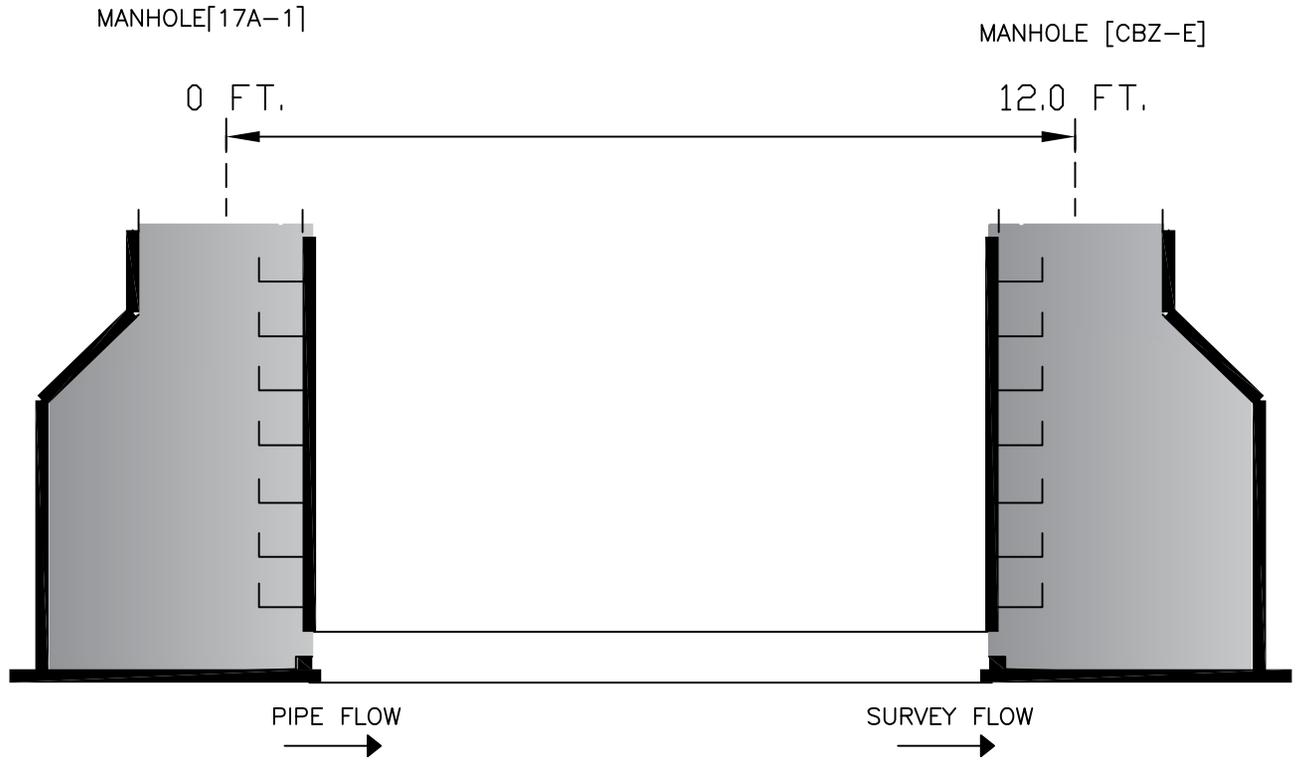
SPR	0	MPR	0	PO Number		Customer	
SPRI	0	MPRI	0	Work Order Number		Purpose	
QSR	0000	QMR	0000				
OPR	0	Surveyed By BJAMES	Direction Downstream	Date 20200129		Media label	
OPRI	0	Certificate Number U-0317-07007227	Pre-Cleaning Light Cleaning	Time 11:40		Weather	
Date Cleaned				End Time 11:47		Additional Info	





STRUCTURAL DEFECT CODING
*ABBREVIATION + STRUCT. DEFECT TYPE + SIZE OF DEFECT

C	CRACK	ROOTS	
F	FRACTURE	F	FINE
B	BROKEN	M	MEDIUM
H	HOLE	T	TAP
J	JOINT	B	BALL
D	DEFORMED	JOINTS	
X	COLLAPSE	JOS	OFFSET SMALL
LF	LINING FEATURES	JOM	OFFSET MEDIUM
WF	WELD FAILURE	JOL	OFFSET LARGE
RP	POINT REPAIR	CRACKS	
A	ACCESS POINT	CL	LONGITUDINAL
V	VISIBLE	CC	CIRCUMFERENTIAL
S	SURFACE DAMAGE	CM	MULTIPLE
		CS	SPIRAL
		CH	HINGE



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Rev. No.	DATE	BY	DESCRIPTION
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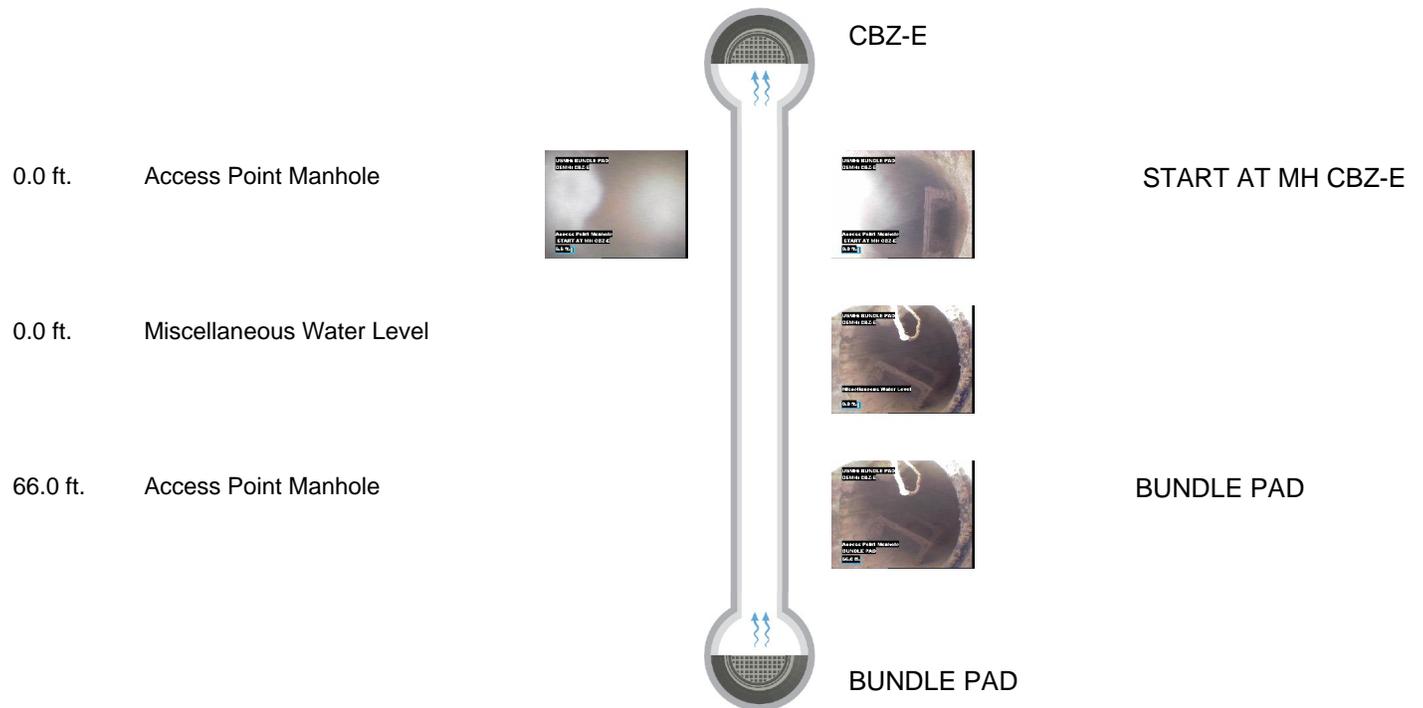


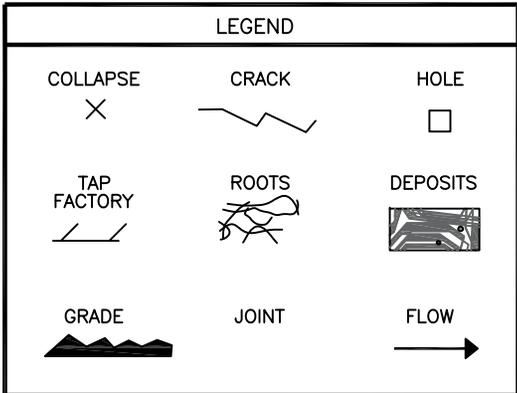
IT pipes
 4921 Alexander Blvd
 Albuquerque, NM
 505-341-0109

Defect Listing Plot with Images

Pipe Segment Refere...	City GALLUP	Street BUNDLE PAD	Material Ductile Iron Pipe		Location C...	Pipe Use Stormwater
Upstream MH BUNDLE PAD	Total Length	Year Constructed	Shape Circular		Location Details	
Downstream MH CBZ-E	Length surveyed 66	Year Renewed	Height 8	Width 8	Pipe Joint...	

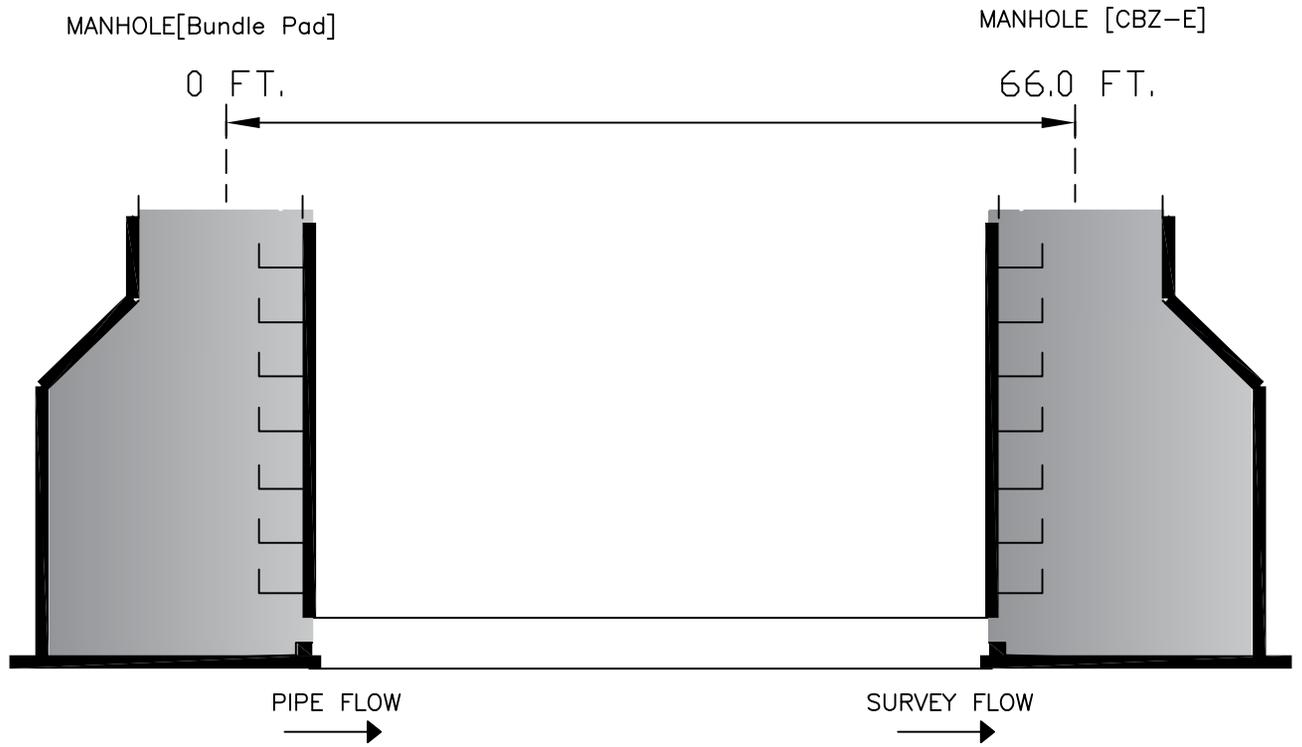
SPR 0	MPR 0	PO Number		Customer		
SPRI 0	MPRI 0	Work Order Number		Purpose		
QSR 0000	QMR 0000					
OPR 0	Surveyed By BJAMES	Direction Upstream	Date 20200128		Media label	
OPRI 0	Certificate Number U-0317-07007227	Pre-Cleaning No Pre-Cleaning	Time 11:04		Weather	
Date Cleaned			End Time 11:15		Additional Info	





STRUCTURAL DEFECT CODING
*ABBREVIATION + STRUCT. DEFECT TYPE + SIZE OF DEFECT

C	CRACK	ROOTS	
F	FRACTURE	F	FINE
B	BROKEN	M	MEDIUM
H	HOLE	T	TAP
J	JOINT	B	BALL
D	DEFORMED	JOINTS	
X	COLLAPSE	JOS	OFFSET SMALL
LF	LINING FEATURES	JOM	OFFSET MEDIUM
WF	WELD FAILURE	JOL	OFFSET LARGE
RP	POINT REPAIR	CRACKS	
A	ACCESS POINT	CL	LONGITUDINAL
V	VISIBLE	CC	CIRCUMFERENTIAL
S	SURFACE DAMAGE	CM	MULTIPLE
		CS	SPIRAL
		CH	HINGE



REVISIONS

Rev. No.	DATE	BY	DESCRIPTION
0	11/14/2019	TD	GENERATED TO CAD



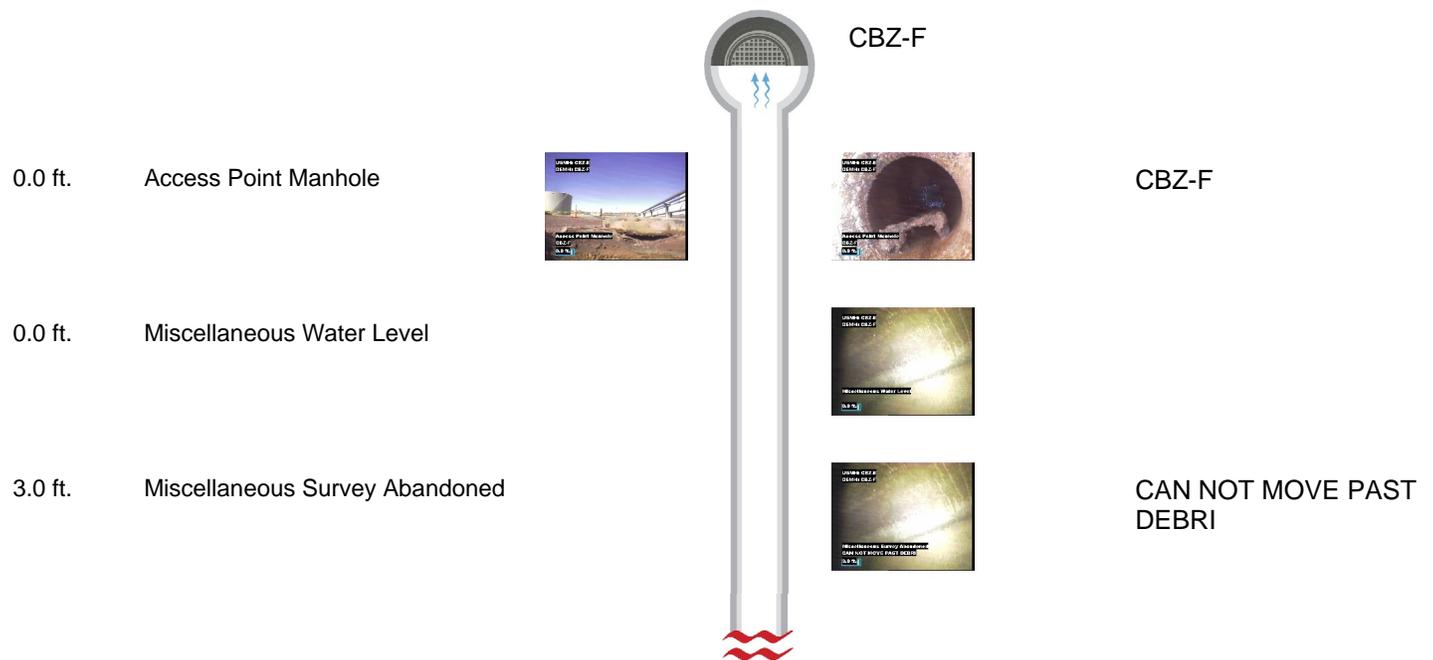


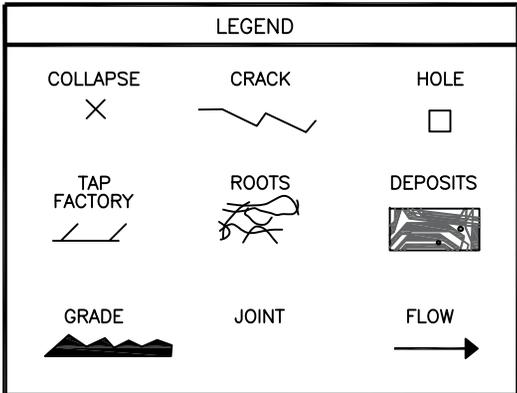
4921 Alexander Blvd
Albuquerque, NM
505-341-0109

Defect Listing Plot with Images

Pipe Segment Refere...	City GALLUP	Street BUNDLE PAD	Material PolyVinyl Chloride		Location C...	Pipe Use Stormwater
Upstream MH CBZ-E	Total Length	Year Constructed	Shape Circular		Location Details	
Downstream MH CBZ-F	Length surveyed 3	Year Renewed	Height 16	Width 16	Pipe Joint...	

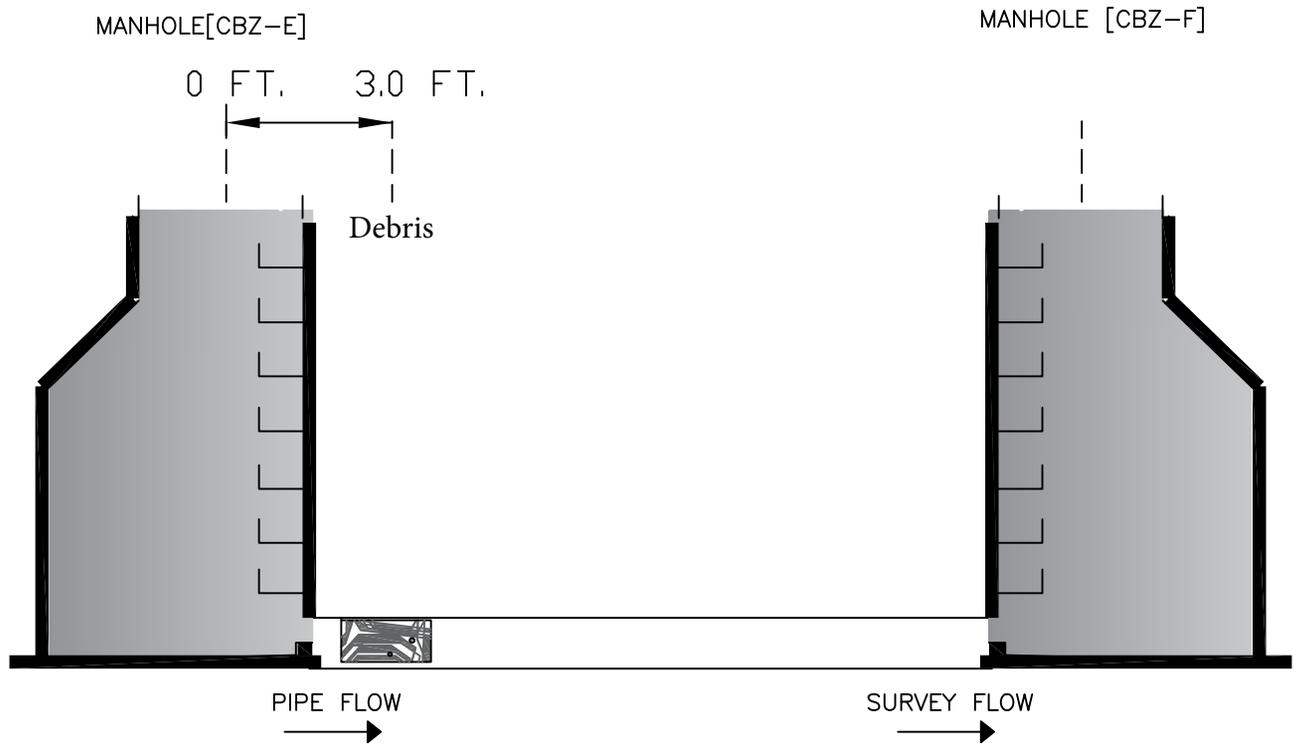
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OPRI 0	Certificate Number U-0317-07007227	Pre-Cleaning No Pre-Cleaning	Time 12:45	Weather	
Date Cleaned			End Time 12:51	Additional Info	





STRUCTURAL DEFECT CODING
*ABBREVIATION + STRUCT. DEFECT TYPE + SIZE OF DEFECT

C	CRACK	ROOTS	
F	FRACTURE	F	FINE
B	BROKEN	M	MEDIUM
H	HOLE	T	TAP
J	JOINT	B	BALL
D	DEFORMED	JOINTS	
X	COLLAPSE	JOS	OFFSET SMALL
LF	LINING FEATURES	JOM	OFFSET MEDIUM
WF	WELD FAILURE	JOL	OFFSET LARGE
RP	POINT REPAIR	CRACKS	
A	ACCESS POINT	CL	LONGITUDINAL
V	VISIBLE	CC	CIRCUMFERENTIAL
S	SURFACE DAMAGE	CM	MULTIPLE
		CS	SPIRAL
		CH	HINGE



REVISIONS			
REV. NO.	DATE	BY	DESCRIPTION
0	11/14/2019	TD	GENERATED TO CAD



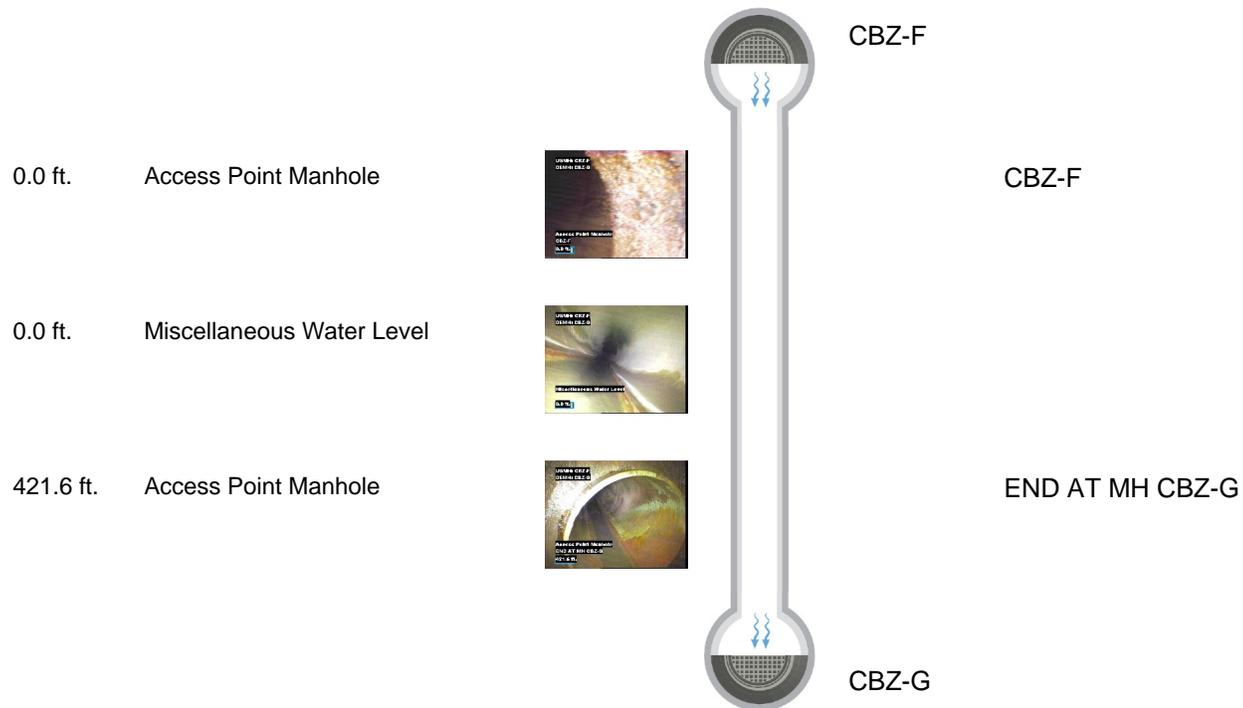


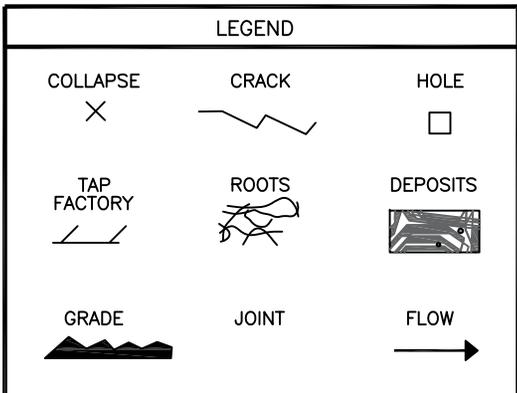
IT pipes
 4921 Alexander Blvd
 Albuquerque, NM
 505-341-0109

Defect Listing Plot with Images

Pipe Segment Refere...	City GALLUP	Street BUNDLE PAD	Material PolyVinyl Chloride		Location C...	Pipe Use Stormwater
Upstream MH CBZ-F	Total Length	Year Constructed	Shape Circular		Location Details	
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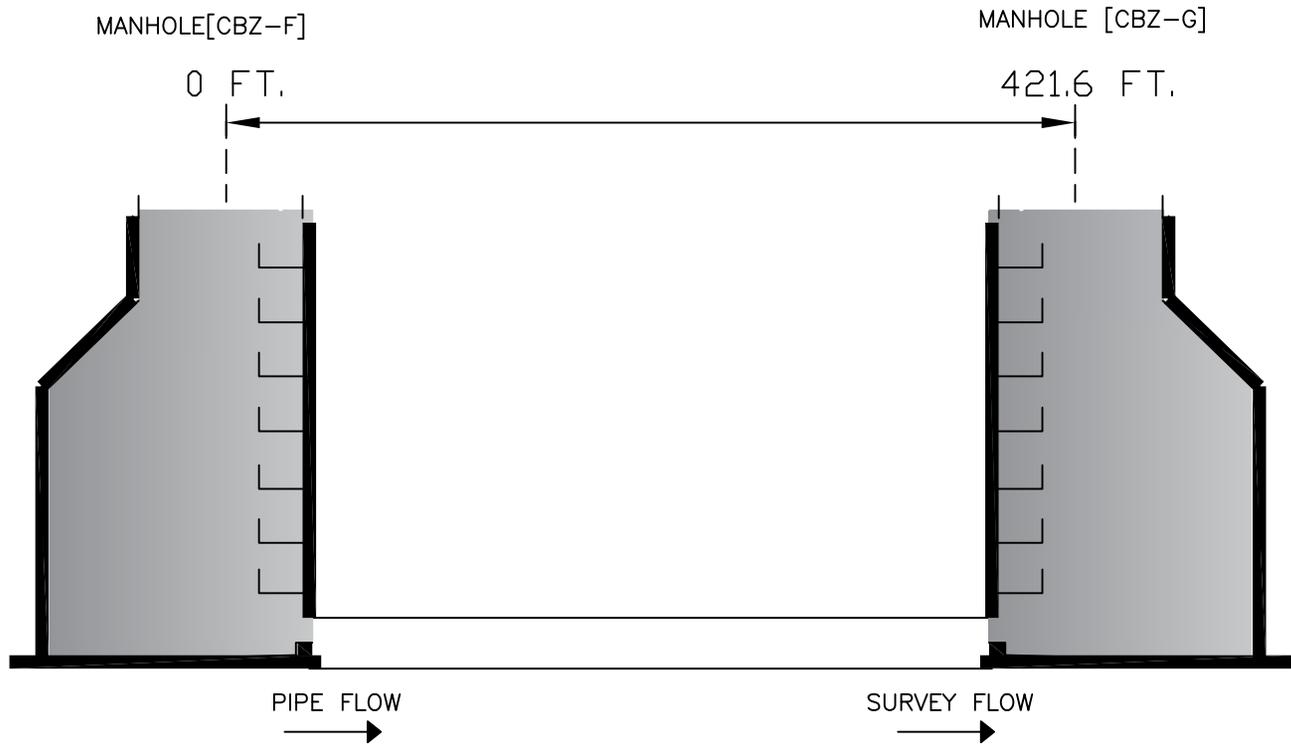
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OPRI 0	Certificate Number U-0317-07007227	Pre-Cleaning No Pre-Cleaning	Time 13:21		Weather	
Date Cleaned			End Time 13:41		Additional Info	





STRUCTURAL DEFECT CODING
*ABBREVIATION + STRUCT. DEFECT TYPE + SIZE OF DEFECT

C	CRACK	ROOTS	
F	FRACTURE	F	FINE
B	BROKEN	M	MEDIUM
H	HOLE	T	TAP
J	JOINT	B	BALL
D	DEFORMED	JOINTS	
X	COLLAPSE	JOS	OFFSET SMALL
LF	LINING FEATURES	JOM	OFFSET MEDIUM
WF	WELD FAILURE	JOL	OFFSET LARGE
RP	POINT REPAIR	CRACKS	
A	ACCESS POINT	CL	LONGITUDINAL
V	VISIBLE	CC	CIRCUMFERENTIAL
S	SURFACE DAMAGE	CM	MULTIPLE
		CS	SPIRAL
		CH	HINGE



REVISIONS			
Rev. No.	DATE	BY	DESCRIPTION
0	11/14/2019	TD	GENERATED TO CAD





4921 Alexander Blvd

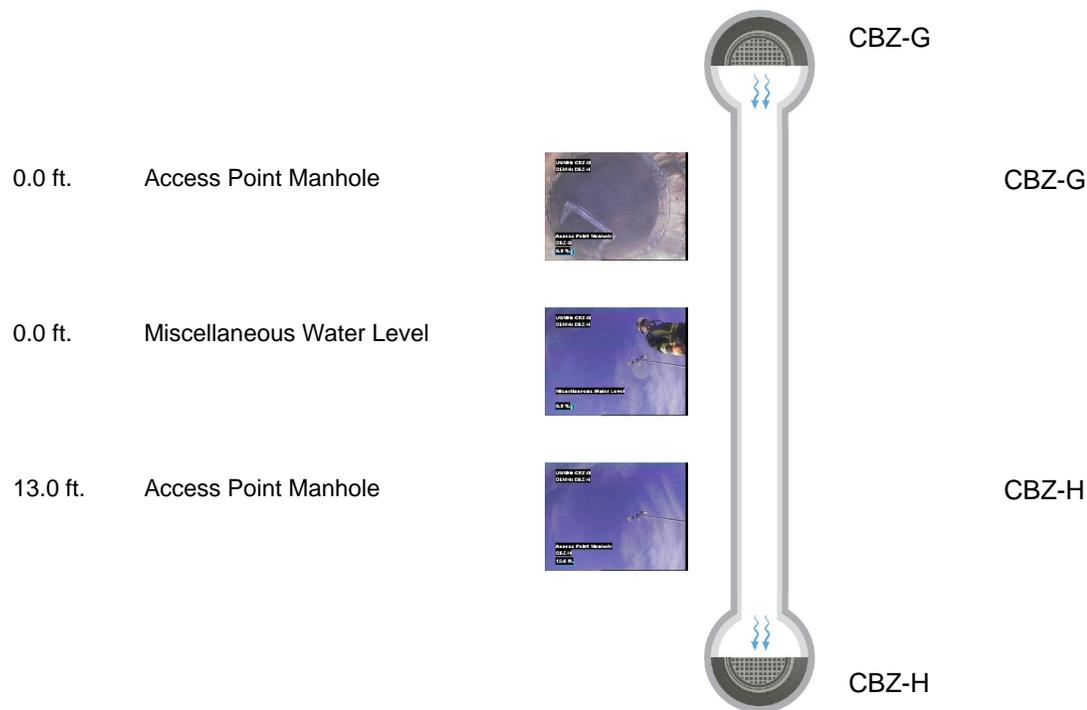
Albuquerque, NM

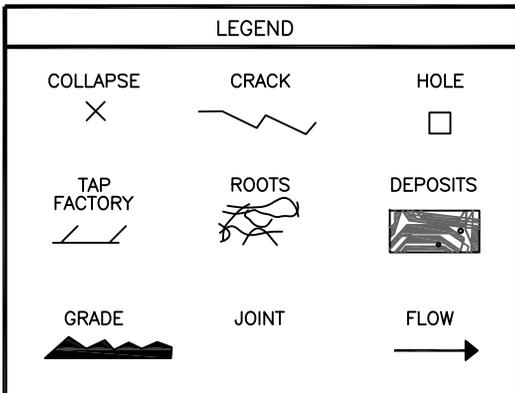
505-341-0109

Defect Listing Plot with Images

Pipe Segment Refere...	City GALLUP	Street BUNDLE PAD	Material Ductile Iron Pipe		Location C...	Pipe Use Stormwater
Upstream MH CBZ-G	Total Length	Year Constructed	Shape Circular		Location Details	
Downstream MH CBZ-H	Length surveyed 13	Year Renewed	Height 12	Width 12	Pipe Joint...	

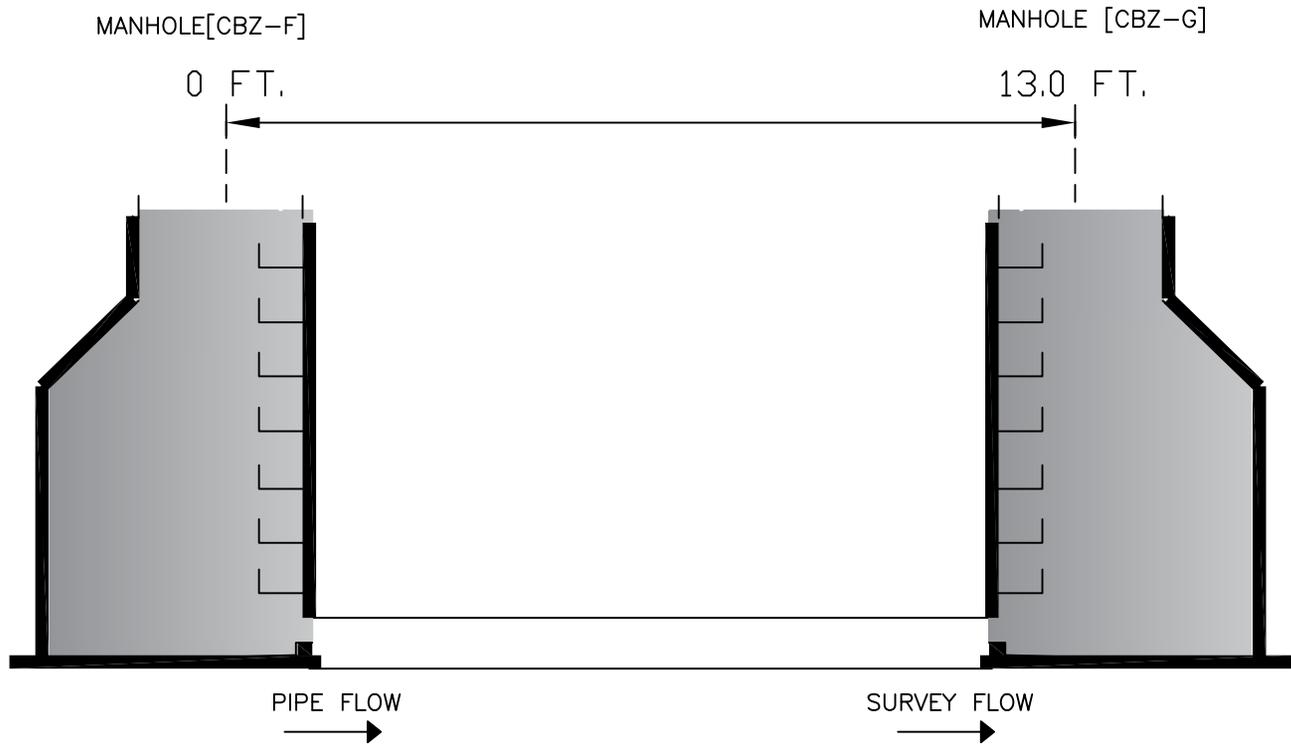
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OPRI 0	Certificate Number U-0317-07007227	Pre-Cleaning No Pre-Cleaning	Time 09:12		Weather	
Date Cleaned			End Time 09:16		Additional Info	





STRUCTURAL DEFECT CODING
*ABBREVIATION + STRUCT. DEFECT TYPE + SIZE OF DEFECT

C	CRACK	ROOTS	
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B	BROKEN	M	MEDIUM
H	HOLE	T	TAP
J	JOINT	B	BALL
D	DEFORMED	JOINTS	
X	COLLAPSE	JOS	OFFSET SMALL
LF	LINING FEATURES	JOM	OFFSET MEDIUM
WF	WELD FAILURE	JOL	OFFSET LARGE
RP	POINT REPAIR	CRACKS	
A	ACCESS POINT	CL	LONGITUDINAL
V	VISIBLE	CC	CIRCUMFERENTIAL
S	SURFACE DAMAGE	CM	MULTIPLE
		CS	SPIRAL
		CH	HINGE



REVISIONS

REV. NO.	DATE	BY	DESCRIPTION
0	11/14/2019	TD	GENERATED TO CAD

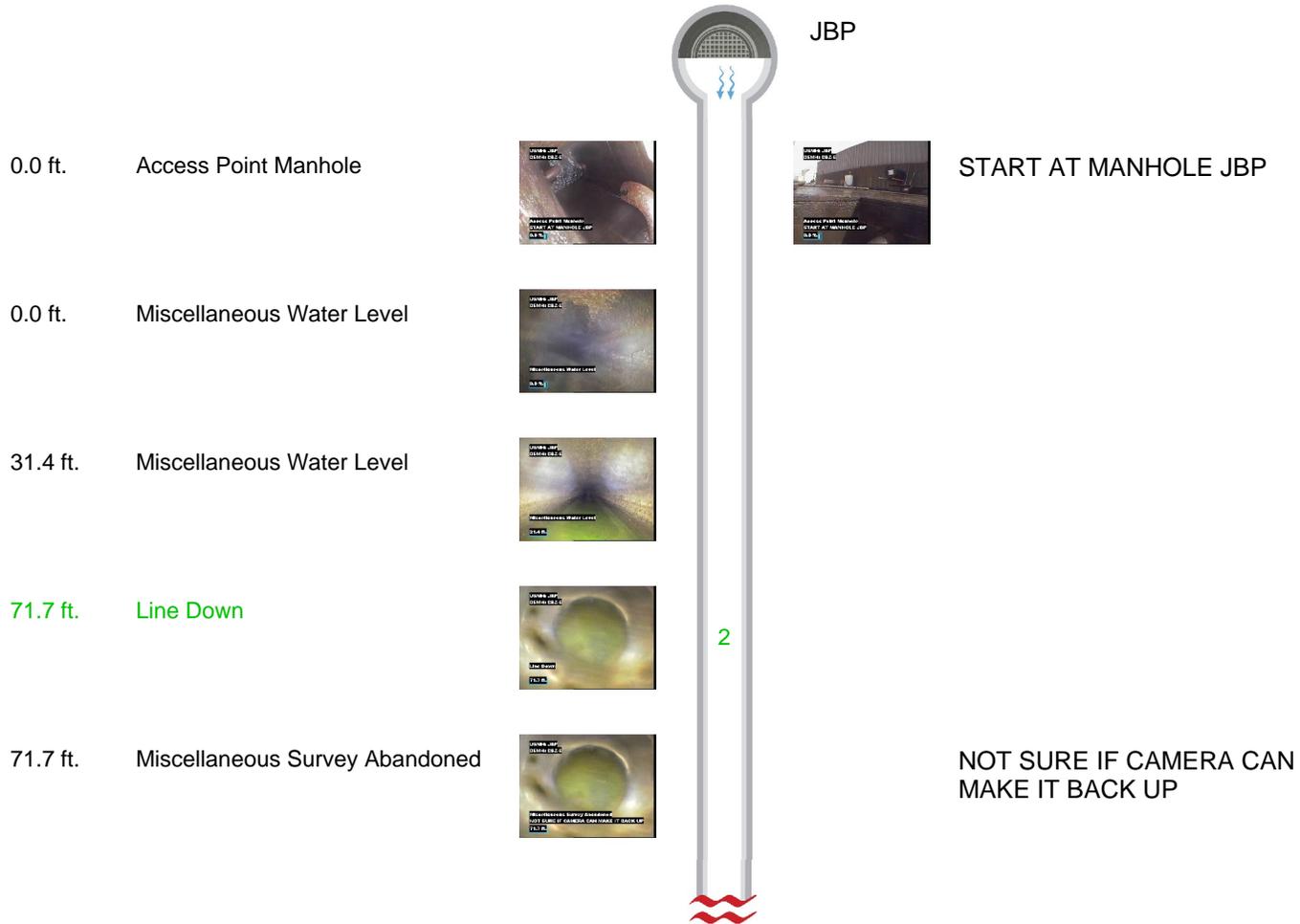


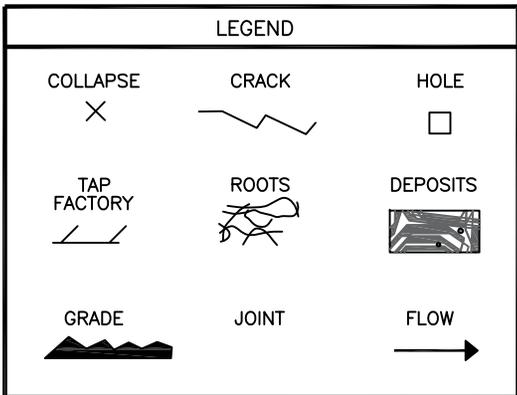


IT pipes
 4921 Alexander Blvd
 Albuquerque, NM
 505-341-0109

Defect Listing Plot with Images

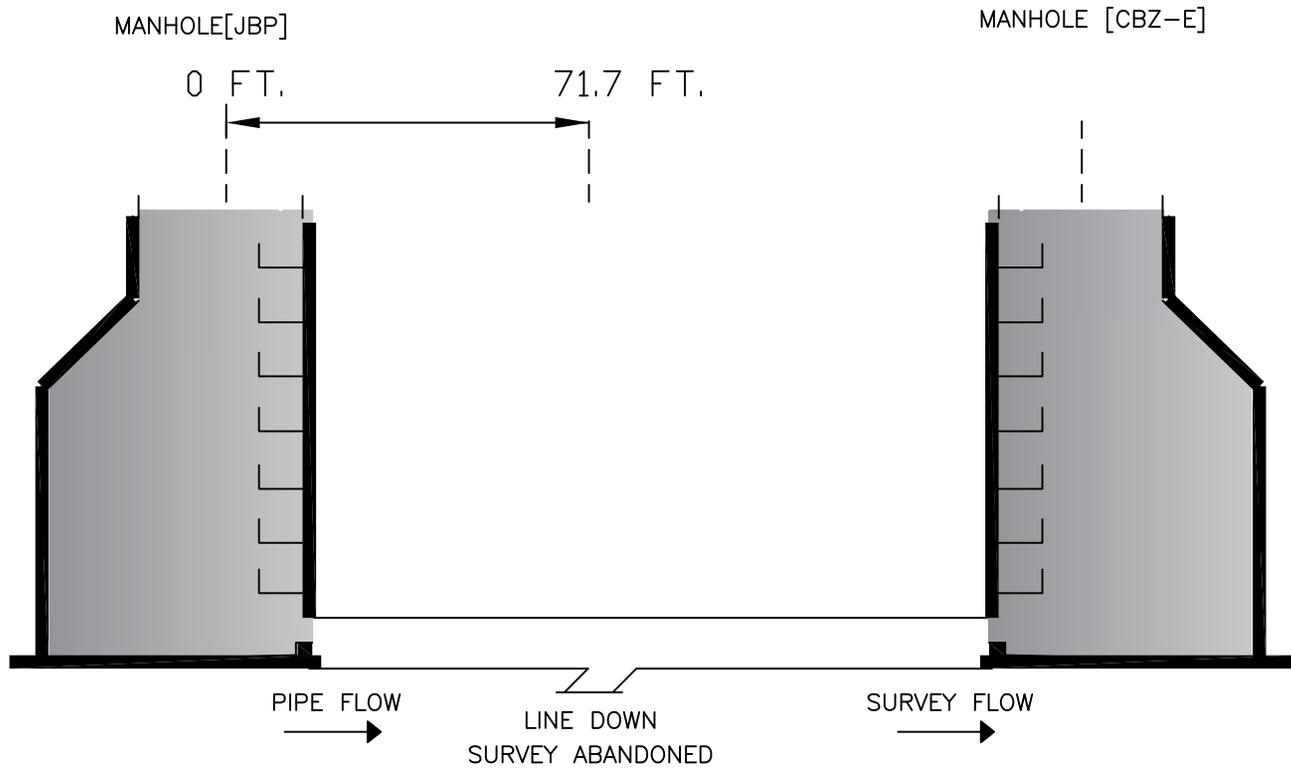
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Downstream MH CBZ-E	Length surveyed 71.7	Year Renewed	Height 8	Width 8	Pipe Joint...
SPR 0	MPR 2	PO Number		Customer	
SPRI 0	MPRI 2	Work Order Number		Purpose	
QSR 0000	QMR 2100				
OPR 2	Surveyed By BJAMES	Direction Downstream	Date 20200129	Media label	
OPRI 2	Certificate Number U-0317-07007227	Pre-Cleaning No Pre-Cleaning	Time 10:26	Weather	
Date Cleaned			End Time 10:36	Additional Info	





STRUCTURAL DEFECT CODING
*ABBREVIATION + STRUCT. DEFECT TYPE + SIZE OF DEFECT

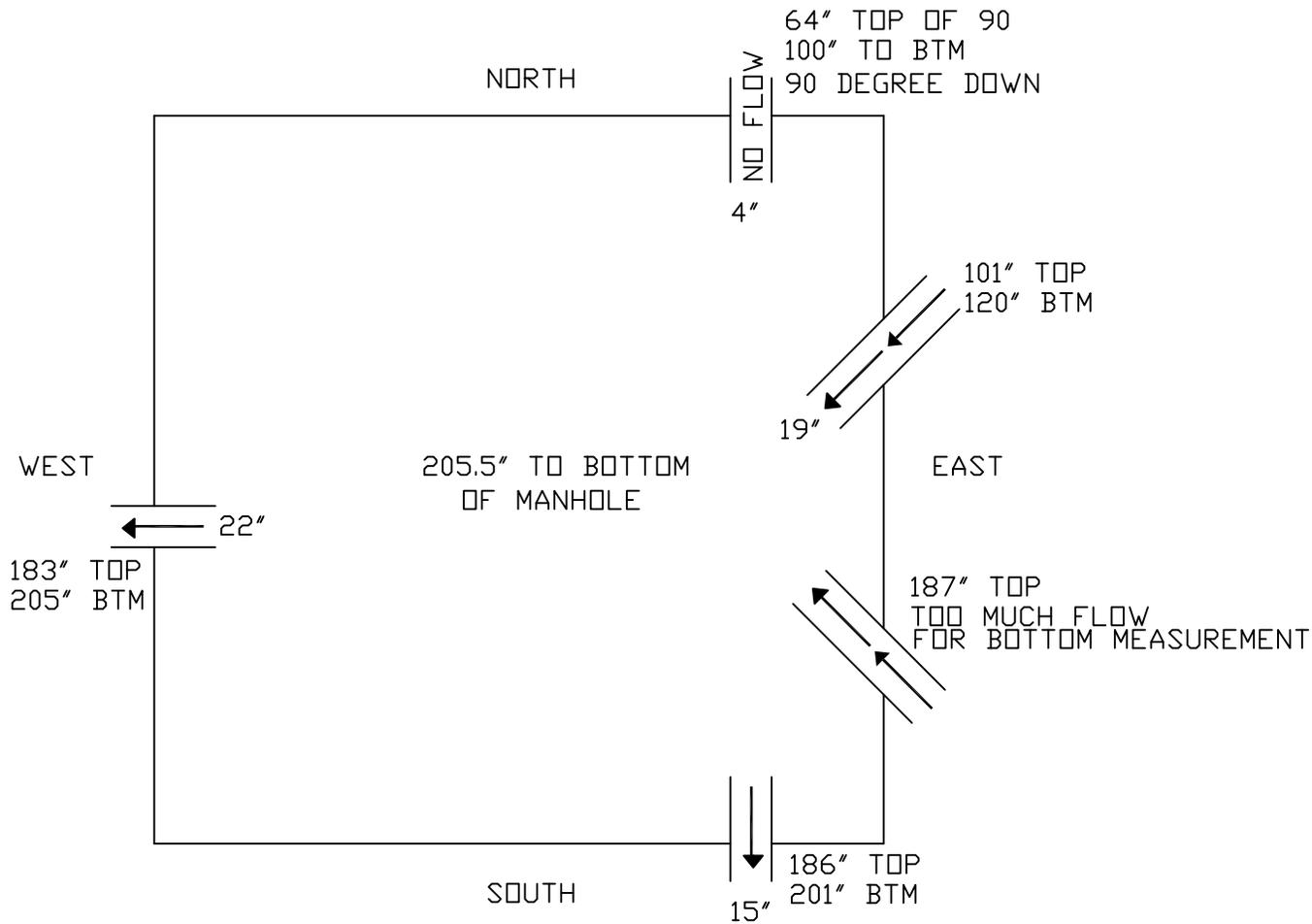
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F	FRACTURE	F	FINE
B	BROKEN	M	MEDIUM
H	HOLE	T	TAP
J	JOINT	B	BALL
D	DEFORMED	JOINTS	
X	COLLAPSE	JOS	OFFSET SMALL
LF	LINING FEATURES	JOM	OFFSET MEDIUM
WF	WELD FAILURE	JOL	OFFSET LARGE
RP	POINT REPAIR	CRACKS	
A	ACCESS POINT	CL	LONGITUDINAL
V	VISIBLE	CC	CIRCUMFERENTIAL
S	SURFACE DAMAGE	CM	MULTIPLE
		CS	SPIRAL
		CH	HINGE



REVISIONS			
REV. NO.	DATE	BY	DESCRIPTION
0	11/14/2019	TD	GENERATED TO CAD



UNKNOWN PROCESS 1



REVISIONS			
REV. NO.	DATE	BY	DESCRIPTION
0	02/05/2020	KC	GENERATED TO CAD



	REMOTE VISUAL INSPECTION – SEWER AND PROCESS LINES	
CLIENT: MARATHON	FACILITY: GALLUP NM	DATE: 2020.1.29
ID# UNKNOWN PROCESS 1	PHOTOLOG	SURVEYED BY: B. JAMES



**UNIDENTIFIED PROCESS LINE 1
PHOTO 1**

**UNIDENTIFIED PROCESS LINE 1
PHOTO 2**



**UNIDENTIFIED PROCESS LINE 1
PHOTO 3**

**UNIDENTIFIED PROCESS LINE 1
PHOTO 4**

		REMOTE VISUAL INSPECTION – STORMWATER AND PROCESS LINES	
CLIENT: MARATHON		FACILITY: GALLUP NM	DATE: 2020.1.29
ID# UNKNOWN PROCESS 1		PHOTOLOG	SURVEYED BY: B. JAMES



**UNIDENTIFIED PROCESS LINE 1
PHOTO 5**

**UNIDENTIFIED PROCESS LINE 1
PHOTO 6**



**UNIDENTIFIED PROCESS LINE 1
PHOTO 7**

**UNIDENTIFIED PROCESS LINE 1
PHOTO 8**

	REMOTE VISUAL INSPECTION – STORMWATER AND PROCESS LINES	
CLIENT: MARATHON	FACILITY: GALLUP NM	DATE: 2020.1.29
ID# UNKNOWN PROCESS 1	PHOTOLOG	SURVEYED BY: B. JAMES



**UNIDENTIFIED PROCESS LINE 1
PHOTO 9**



**UNIDENTIFIED PROCESS LINE 1
PHOTO 10**

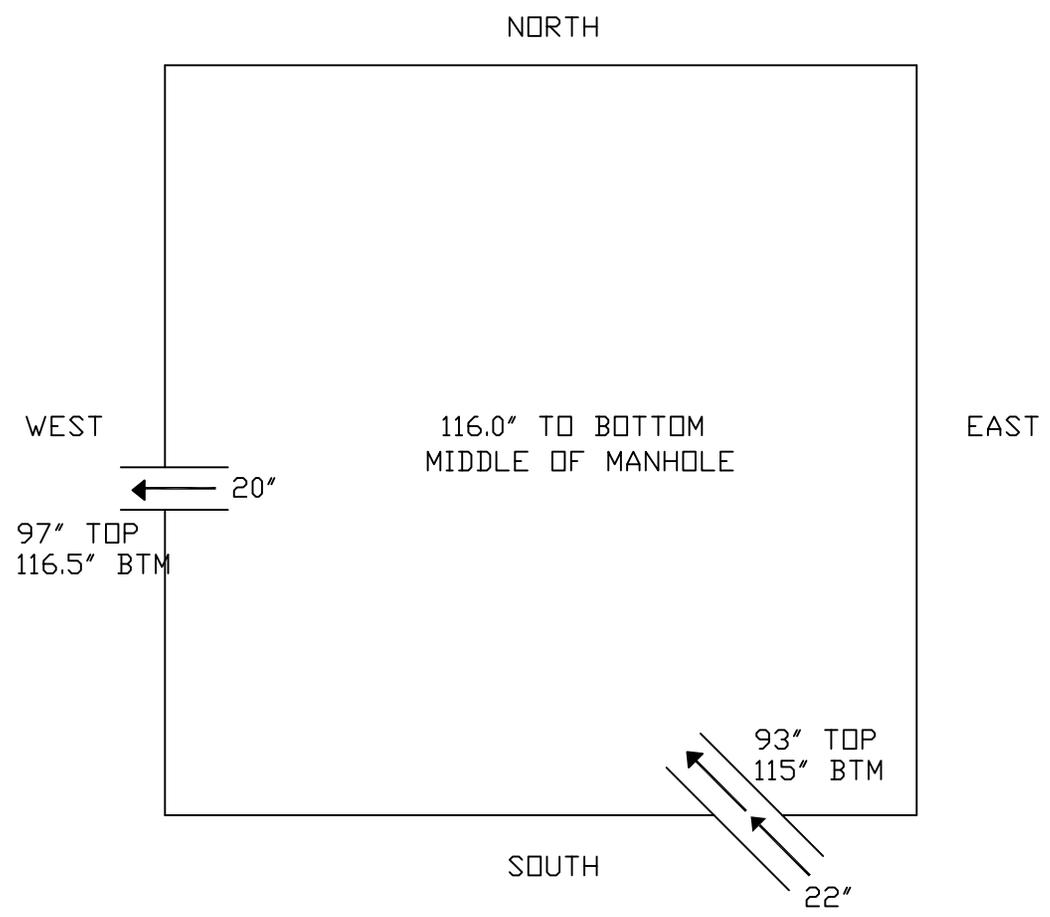


**UNIDENTIFIED PROCESS LINE 1
PHOTO 11**



**UNIDENTIFIED PROCESS LINE 1
PHOTO 12**

UNKNOWN STORMWATER 1



REVISIONS			
REV. NO.	DATE	BY	DESCRIPTION
0	02/05/2020	KC	GENERATED TO CAD



		REMOTE VISUAL INSPECTION – STORMWATER AND PROCESS LINES	
CLIENT: MARATHON	FACILITY: GALLUP NM	DATE: 2020.1.29	
ID# UNKNOWN STORM	PHOTOLOG	SURVEYED BY: B. JAMES	



**UNIDENTIFIED STORM LINE
PHOTO 1**



**UNIDENTIFIED STORM LINE
PHOTO 2**



**UNIDENTIFIED STORM LINE
PHOTO 3**



Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

Appendix B - Bundle Pad Sewer Dye Test - Photographs







Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

Appendix C - SOP – Soil Sampling



memorandum

To: Sampling Team Members
From: Project Manager
Date: September 10, 2021
Re: Standard Operating Procedure – Soil Sampling

1.0 INTRODUCTION

Soil sampling related to site characterization and site clean-up is expected to involve source sampling of potentially impacted soils for characterization and profiling. Soil sampling is expected to occur around the heat exchanger bundle pad area.

All personnel involved in soil sampling projects are required to review this Standard Operating Procedure (SOP) before sampling to ensure the continued generation of reliable data. This SOP is based on experience gained from collecting soil samples and the latest information available in guidance manuals. This SOP may be updated as additional experience and information are acquired.

2.0 PRE-FIELD ACTIVITIES

Several activities will be conducted prior to departure for the project site. A project team will be assigned and the members will begin coordinating the sample collection event with Marathon Petroleum Company. Field equipment will be checked and organized. Access to the areas to be sampled will be checked, and provisions made to pack the necessary equipment for delivery to the project site.

3.0 PREPARATION

The Project Manager will review the current sampling and analysis plans and work plans to determine if any documents need to be brought to the site during monitoring. The Project Manager will also evaluate whether any changes have been made in the sampling and analytical procedures and notify the appropriate personnel.

The Sampling Team Members will review available surface water level data before leaving for the sampling site. This preparation ensures that the proper equipment and personnel are available at the site. All field screening equipment will be inspected prior to departure, ensuring that it is in proper working order. For soil sampling, the only field monitoring equipment used will be a photoionization detector (PID) and it should be calibrated and operated according to manufacturer's recommendations.



Sampling Team Members
September 10, 2021
Page 3

4.0 EQUIPMENT

The following equipment is recommended for soil sampling:

- Required personal protective equipment (PPE), listed in the site-specific health and safety plan (HASP)
- Soil sampling devices (i.e., hand auger)
- Sampling beaker, bottles, labels, and preservatives
- Gloves
- Chain-of-custody/sample-analysis-request forms
- PID
- Global Positioning System (GPS) unit
- Opaque Cooler(s) and bagged ice or frozen Blue Ice
- Detergent or solvent for cleaning monitoring equipment
- Brushes dedicated for decontamination
- Decontamination containers dedicated for wash, rinse 1, and rinse 2
- Paper towels
- Trash bags
- Field logbook

5.0 SAMPLE COLLECTION

A critical aspect of any sampling program is selection and implementation of an appropriate sampling technique. Selection of equipment and technique should be appropriate for the volume of material required and the type of analysis to be performed. In general, the sampling equipment and technique will be chosen to minimize, to the extent possible, the amount of handling a sample will undergo prior to analysis. In many cases, the material to be sampled will be easy to access, and simple "grab" samples collected using a shovel, trowel, or drive sampler are appropriate. In other cases, such as underwater or heavily saturated samples, the soils may be difficult to access, and sampling will involve the use of specialized soil sampling equipment. Specific analytical requirements and sampling frequencies are specified in the work plan.

Soil samples located in dry areas will be collected from representative locations using a decontaminated drive sampler equipped with clean brass or stainless steel sampling rings, a thin-walled tube sampler, or a shovel or hand trowel. The sampling device will be driven completely into the material manually or using a manually operated auger, drive hammer, or mallet. The sampling device will then be extracted from the material using a shovel or trowel as needed. If used, filled sampling rings or the thin walled tube will



Sampling Team Members
September 10, 2021
Page 3

then be removed from the sampling device and immediately sealed on both ends with teflon sheeting and plastic caps. Otherwise, the material will be placed directly from the trowel or other appropriate sampling device into a clean glass jar. The jar will be filled completely to minimize headspace (by tamping during filling), and immediately sealed with a teflon-lined lid.

If necessary, several cores may be collected from each location to provide adequate sample volume for the laboratory. The sample containers will be labeled with indelible ink. Filled sample containers should be wiped dry and placed in a cooler with ice (or equivalent) for storage at the time of collection. Enough ice and protective packing material should be used to cool the samples to 4°C and ensure that the container remains intact prior to final packing and shipment.

Field screening may involve the use of a PID. In this case, material will be placed from the trowel or other appropriate sampling device into a bag. The PID will be inserted into the bag and the reading taken. All samples shall be screened at as close to the same temperature as possible to obtain consistent results. After collecting the reading, the material will be transferred from the bag into a clean glass jar as described above.

Sampling devices will be decontaminated between sampling locations using a four-stage decontamination system consisting of a two detergent/water washes and two deionized water rinses. Sample locations will be recorded with a GPS unit in order to accurately map the sampling locations.

Field logbooks, Soil Sampling Field Log, and photograph logs will provide a written record of field data gathered, field observations, field equipment calibrations, the samples collected for analysis, and sample custody. Color photographs will be used to substantiate and augment the field notes, if necessary. Field records will be maintained in the project file.

697-076-002



Heat Exchanger Bundle Pad Soil Sampling Investigation Work Plan

Appendix D - Boring Log - Field Form



Lithology Log

Sheet _____ of _____

LOCID _____

Project Name		Project Number		Site ID	
Drilling Company		Driller		Ground Elevation	
Drilling Equipment		Drilling Method		Borehole Diameter	
Date/Time Drilling Started		Date/Time Total Depth Reached			
Type of Sampling Device				Water Level (bgs)	
				First _____ Final _____	
Sample Hammer				Geologist/Engineer	
Type _____ Driving Wt. _____ Drop _____				Checked by/Date _____	
Weather _____				Other Personnel Present _____	
Site Conditions _____					
Location Description (include sketch in field logbook)					

Depth	Interval	Recovery	Blow Counts	Description <small>(Include lithology, grain size, sorting, angularity, Munsell color name & notation, mineralogy, bedding, plasticity, density, consistency, etc., as applicable)</small>	ASTM Code	Lithology	Water Content	Estimate % of			Remarks <small>(Include all sample types, times, and depth, odor, organic vapor measurements, etc.)</small>
								Gr	Sa	Fi	
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 5px;">1</div> <div style="margin-bottom: 5px;">2</div> <div style="margin-bottom: 5px;">3</div> <div style="margin-bottom: 5px;">4</div> <div style="margin-bottom: 5px;">5</div> <div style="margin-bottom: 5px;">6</div> <div style="margin-bottom: 5px;">7</div> <div style="margin-bottom: 5px;">8</div> <div style="margin-bottom: 5px;">9</div> <div style="margin-bottom: 5px;">10</div> <div style="margin-bottom: 5px;">11</div> <div style="margin-bottom: 5px;">12</div> <div style="margin-bottom: 5px;">13</div> <div style="margin-bottom: 5px;">14</div> <div style="margin-bottom: 5px;">15</div> <div style="margin-bottom: 5px;">16</div> <div style="margin-bottom: 5px;">17</div> <div style="margin-bottom: 5px;">18</div> <div style="margin-bottom: 5px;">19</div> <div style="margin-bottom: 5px;">20</div> <div style="margin-bottom: 5px;">21</div> <div style="margin-bottom: 5px;">22</div> <div style="margin-bottom: 5px;">23</div> <div style="margin-bottom: 5px;">24</div> <div style="margin-bottom: 5px;">25</div> <div style="margin-bottom: 5px;">26</div> <div style="margin-bottom: 5px;">27</div> <div style="margin-bottom: 5px;">28</div> <div style="margin-bottom: 5px;">29</div> <div style="margin-bottom: 5px;">30</div> <div style="margin-bottom: 5px;">31</div> <div style="margin-bottom: 5px;">32</div> <div style="margin-bottom: 5px;">33</div> <div style="margin-bottom: 5px;">34</div> <div style="margin-bottom: 5px;">35</div> <div style="margin-bottom: 5px;">36</div> <div style="margin-bottom: 5px;">37</div> <div style="margin-bottom: 5px;">38</div> <div style="margin-bottom: 5px;">39</div> <div style="margin-bottom: 5px;">40</div> <div style="margin-bottom: 5px;">41</div> <div style="margin-bottom: 5px;">42</div> <div style="margin-bottom: 5px;">43</div> <div style="margin-bottom: 5px;">44</div> <div style="margin-bottom: 5px;">45</div> <div style="margin-bottom: 5px;">46</div> <div style="margin-bottom: 5px;">47</div> <div style="margin-bottom: 5px;">48</div> <div style="margin-bottom: 5px;">49</div> <div style="margin-bottom: 5px;">50</div> <div style="margin-bottom: 5px;">51</div> <div style="margin-bottom: 5px;">52</div> <div style="margin-bottom: 5px;">53</div> <div style="margin-bottom: 5px;">54</div> <div style="margin-bottom: 5px;">55</div> <div style="margin-bottom: 5px;">56</div> <div style="margin-bottom: 5px;">57</div> <div style="margin-bottom: 5px;">58</div> <div style="margin-bottom: 5px;">59</div> <div style="margin-bottom: 5px;">60</div> <div style="margin-bottom: 5px;">61</div> <div style="margin-bottom: 5px;">62</div> <div style="margin-bottom: 5px;">63</div> <div style="margin-bottom: 5px;">64</div> <div style="margin-bottom: 5px;">65</div> <div style="margin-bottom: 5px;">66</div> <div style="margin-bottom: 5px;">67</div> <div style="margin-bottom: 5px;">68</div> <div style="margin-bottom: 5px;">69</div> <div style="margin-bottom: 5px;">70</div> <div style="margin-bottom: 5px;">71</div> <div style="margin-bottom: 5px;">72</div> <div style="margin-bottom: 5px;">73</div> <div style="margin-bottom: 5px;">74</div> <div style="margin-bottom: 5px;">75</div> <div style="margin-bottom: 5px;">76</div> <div style="margin-bottom: 5px;">77</div> <div style="margin-bottom: 5px;">78</div> <div style="margin-bottom: 5px;">79</div> <div style="margin-bottom: 5px;">80</div> <div style="margin-bottom: 5px;">81</div> <div style="margin-bottom: 5px;">82</div> <div style="margin-bottom: 5px;">83</div> <div style="margin-bottom: 5px;">84</div> <div style="margin-bottom: 5px;">85</div> <div style="margin-bottom: 5px;">86</div> <div style="margin-bottom: 5px;">87</div> <div style="margin-bottom: 5px;">88</div> <div style="margin-bottom: 5px;">89</div> <div style="margin-bottom: 5px;">90</div> <div style="margin-bottom: 5px;">91</div> <div style="margin-bottom: 5px;">92</div> <div style="margin-bottom: 5px;">93</div> <div style="margin-bottom: 5px;">94</div> <div style="margin-bottom: 5px;">95</div> <div style="margin-bottom: 5px;">96</div> <div style="margin-bottom: 5px;">97</div> <div style="margin-bottom: 5px;">98</div> <div style="margin-bottom: 5px;">99</div> <div style="margin-bottom: 5px;">100</div> </div>											

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS
 Action 51838

CONDITIONS

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID: 267595
	Action Number: 51838
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
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