Country Club Sewer Maintenance District Final Facilities Assessment Report



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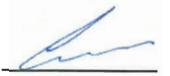
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Executive Summary

Bureau Veritas North America, Inc.'s (Bureau Veritas') division of Public Works Services was retained by the Imperial County Department of Public Works, acting on behalf of the Country Club Sewer Maintenance District (CCSMD), to evaluate the condition of the wastewater conveyance facilities serving CCSMD. The facilities that were evaluated included gravity sewer mains, sewer manholes, a wastewater pump station, and a sewer force main. CCSMD facilities include the following:

- Approximately 8,830 feet of 8-inch vitrified clay pipe (VCP) and 1,450 feet of 10-inch polyvinyl chloride (PVC) gravity sewer main
- 34 manholes, identified as MH 1 through MH 11, MH 13 through 33, MH 12
 North, and MH 12 South
- 9,963 feet of four-inch PVC sewer force main
- Duplex pumps and motors housed in a fiberglass enclosure above the wet well of the pump station

The gravity sewage collection system serving CCSMD was found to be in poor condition due a lack of regular maintenance and large amounts of debris found in the system. Most of the system had to be pumped or cleaned out before being inspected. The pipeline segments that were cleaned and inspected were in generally in good condition with the typical minor issues such as cracked pipes, root intrusions, and offset pipe joints. The original sewer pipelines were installed with slopes and sags that are too flat to be self-



Vactor truck cleaning operations.

cleaning; it is not economical to completely remedy this issue and needs to be addressed through a long-term maintenance program. The sewer system also has inherent problems with maintenance access, as most of the manholes are located in the front and back yards of residences. A preliminary estimate of the capital repairs required for the collection system is \$450,000, including contingencies.





24 of the 34 total manholes within the CCSMD system were inspected and were found to be in fair to very poor condition, depending on location. The remaining manholes were not found, buried, or otherwise inaccessible when the inspections were performed. The lower, base portions of most manholes were found to be in good condition, with the upper portions suffering from concrete corrosion, damaged grade rings, poorly fitted frames and covers, and obstructions blocking access to the



Manhole 5 showing corrosion.

manhole opening. Most of the manholes had concentric cones and steel rungs, features no longer considered acceptable for safety reasons. A total of \$460,000 in capital improvements is recommended for the CCSMD manholes, including contingencies.

The pump station was last upgraded in 2004, and is considered to be in fair condition. The duplex motors, pumps, controls, wet well, and enclosure were evaluated and found to be in acceptable condition. Relatively minor upgrades to the pump station are recommended, totaling approximately \$20,000 with contingencies.

The sewer force main from the pump station was evaluated and found to be undersized from a hydraulic perspective, not allowing the pumps to function in their optimum operating range. The existing force main has also ruptured at least three times in the past several years, most likely due to the marginal strength rating of the original pipe, poor quality control during the initial construction, heat degradation of the pipe material, and pressure spikes from the newer, more powerful pumps. A



Existing 4-inch force main pipe removed from the trench.

preliminary estimate of \$740,000 in improvements, including contingencies, are recommended for the sewer force main, the bulk of which is replacement of the existing four-inch force main with a six-inch pipeline.





Background and Overview

The land around the Barbara Worth Country Club was developed in the early 1970s, and included single family residences and a number of duplexes. The country club and the golf course were the only commercial properties in the CCSMD. The CCSMD was originally served by a collection system conveying wastewater to a small package treatment plant located on Barbara Worth Drive, which treated the effluent and discharged it into the Barbara Worth Drain. It is not known to what level the effluent was treated at that time. This arrangement proved unworkable over the long term and, in 1974, a new 10-inch gravity sewer main was constructed and connected to a new wastewater pump station located on Holton Road near the Barbara Worth Drain. The existing treatment plant was then removed from service. Concurrently, a 1.9-mile force main was constructed from the pump station north along Imperial Irrigation District and County rights-of-way to a manhole at the intersection of Kamm Road and Gowling Road. At this manhole the effluent was discharged into the City of Holtville's outfall sewer and conveyed west via gravity to the City's wastewater plant for treatment.



Wastewater pump station



Barbara Worth Drain



Barbara Worth Country Club golf course





Pipeline Inspections

Gravity sewer pipeline inspections were initially performed from September 24 to September 27, 2012 by Affordable Pipeline Services. The inspections were completed using a Cues Inc. OZII Pan-Tilt Optical Zoom II camera mounted on an Ultra Shorty tracked, self-propelled camera transporter. The camera was connected via video cable to a mobile CCTV van that was specially equipped for inspecting underground pipelines.

Initially access to the system was difficult because of several factors. It was quickly determined that portions of the



Image taken directly from CCTV camera shows an 8inch pipeline between MH 19 and 21 that is 25%+ full of silt and debris.

system were not constructed according to the plans; many manholes were buried under dirt or asphalt; several manholes were located within private yards; and other manholes were not found at all. Several of the manholes were later found by using a tracking device attached to the video camera, which could then be electronically located from the surface. Other manholes could not be located using the camera without clearing the main of debris, nor could they be located on the surface with a metal detector because of the access issues described above.

Portions of the sewer system as constructed did not match the record drawings provided by the County, particularly along Murray Drive. The residences on the east side of Murray Drive appear to be served by a sewer main running through their backyards along the west side of the golf course. Pending full cleaning, inspection, and additional investigation of the system it is still not clear precisely how the block bounded by Murray Drive, Barbara Worth Drive, and Country Club Drive receives sewer service. MH 28 has a small four-



Video inspection operations at MH 26. Note the location of the manhole and sewer line at the rear of the van within private backyards; this is one of the more accessible locations.

inch pipe coming from the west, the direction where MH 33 should be located;





however, a four-inch main is totally inadequate to serve the 10 residences within that block. MH 33 was not found during the inspections, but it is believed to be located in the backyard of 2093 Murray Drive. This block may be served by wye lateral connections across Murray Drive to the east; via a main paralleling Murray Drive along the rear property lines and connecting to MH 28; or connecting to the newer 10-inch sewer north of Barbara Worth Drive. No trench cuts were observed in Barbara Worth Drive to support this latter alternative.

When the actual inspection effort began on September 24, it was quickly apparent that the pipelines were suffering from a lack of regular maintenance. It was not possible to get the camera into many of the sewer mains due to extensive accumulations of silt, dirt, grease, and other debris. Nearly all of the sewer mains were found to be as much as 90% full of silt and debris; others had blockages from large clumps of grease and tree roots; and others were surcharged with effluent, preventing inspection. Imperial County Department of Public Works (ICDPW) staff arranged to pump out the surcharged mains between MH 1 and MH 5 for inspection, revealing that they were also mostly blocked by debris. Attempted flushing of the lines with a water truck only served to move the debris to the next section of pipe. Following this effort a solid clump of grease and debris was observed in MH 1 that was approximately 6 inches by 6 inches by 24 inches and is illustrative of the debris issues with the system.

As a result of the poor conditions, only 2,703 feet of the 12,000 feet of gravity sewer were inspected during the initial mobilization. Only 6 of the 34 gravity sewer main segments were initially inspected due to debris problems. The portions of the VCP that could be inspected were generally in good condition, with the typical cracks, misaligned/open joints, sags, small roots, projecting laterals, and other relatively minor issues. Unusual conditions that were found include a massive taproot intrusion near MH 25; sharp horizontal bends in the main south of MH 31 that prevented inspection by the camera; and undesirable drop manhole plumbing at MH 31.

A second mobilization to the site on October 25 was accompanied by a Vactor truck, which was used to clean the debris out of the north section of the system along Barbara Worth Drive to allow for inspection. With camera access to the system the lines could not only be inspected but several additional buried manholes were located, including MHs 7, 11 and 29. It should be noted that inspections were not performed on the newly located manholes. Once the debris was removed the pipelines were found to be in generally good condition. A four-inch lateral coming from the west into MH 28 was also inspected by push camera as far as the centerline of Murray Drive. It is presumed, but not confirmed, that this pipe continues west to MH 33 as noted above.





The CCSMD system has several inherent conditions that contribute to long-term maintenance issues. Although the system has not been surveyed it appears that the pipeline slopes are all less than 0.5 percent, and it is believed that most are in the 0.2 to 0.3 percent range. Several sags and adverse slopes were noted in the inspections. These very mild slopes do not provide for cleansing velocities even at peak flows, so the solids are deposited in the pipelines and are unmoved by subsequent flows, even during peak periods. Eight-inch sewer



Vactor truck cleaning operations at newly located MH 7 within the golf course. Note the size of the equipment required to efficiently maintain the system.

lines should be sloped at a minimum of 0.4 percent to provide cleansing velocities at peak flow rates (refer to Appendix B for the CCSMD Sewer Study estimated flows and velocities).

The pipeline sections that cross the golf course were found to be nearly full of silt that prevented access for inspections. The heavy irrigation of the golf course can carry fine material from the soil into the sewer pipeline through small cracks or open joints, eventually filling the pipe with silt. Replacing the entire gravity collection system at the proper minimum slope is not economically feasible, and would in turn require replacement of the pump station and likely the force main. Instead, CCSMD should institute a program of regular annual maintenance to address these issues, as well as a capital repair program to address the existing operational issues that have been identified.

Right-of-way preservation and maintenance access is also a major issue with the CCSMD system. The existing sewer mains are located in the parkways of the streets - which is not desirable as most homeowners consider that strip as part of their front yards - and along rear property lines, which places them in resident's backyards. No maintenance or utility easements were noted in the documents that were reviewed; it appears maintenance access rights are prescriptive within CCSMD. The backyard sewer locations are very problematic as maintenance access for the proper equipment (i.e., a large Vactor truck) is extremely difficult. In many locations the residents have constructed patios, landscaping, building structures, walls, and fences over the sewer mains and manholes, apparently without knowledge of the facilities' presence or regard for maintenance access. Some of the most serious examples are a large tree



planted directly over the main north of MH 25, which has created a taproot intrusion almost blocking the main, and an enclosed patio structure built over the main behind a residence on Anderholt Road.

In addition to the siltation problems noted above, grease clogs were found to be a recurring issue within the system. Cooking grease, fats, and oils discharged into the system eventually congeal and collect other debris, forming large, solid clumps that block flows. Residents can be educated to avoid discharging large quantities of grease into the sewer, and any commercial kitchens connected to the system should have a grease trap installed.

Another maintenance issue related to the pump station is that the float switches in the wet well are set so high that the collection system was surcharged or backwatered more than 2,000 feet,



Location of MH 25 within a private patio, as located by the video camera with a tracking device.

all the way up to MHs 5, 6, and 28. This is also an undesirable situation, because as noted previously it causes the solids to drop out of suspension and be deposited in the pipelines. It also causes floating debris, including grease, to congeal and clog the pipeline rather than be conveyed to the pump station. The system cannot be properly inspected or maintained when it is under a constant surcharge.

Video logs from the pipeline inspections are included as Appendix F, and the related digital files are included on compact disks in the rear pocket of this report.



Manhole Inspections

Bill Grigsby, PE, performed inspections on 24 of the 34 manholes within the CCSMD system on September 24 and September 25. 2012. Following the initial reconnaissance, one additional manhole was located on the golf course between manholes 11 and 12, so they are delineated as manholes 12 North and 12 South. Most of the manholes are relatively shallow, at less than eight feet deep, with a 24-inch diameter manhole opening expanding to 48-inches at the base. Most manholes appear to have concentric cones and steel rungs for access, features not typically seen in



The worker is holding the probe at the center of MH 29, which is in a private backyard underneath the decorative wall on the left and the wrought iron fence on the right.

current installations for safety reasons. Several of the manholes were located within the yards of private residences (MHs 24 through 27 and MHs 29 through 33); some were accessible for inspection while many others were not. ICDPW management asked that Bureau Veritas inspectors not enter private yards to perform inspections.

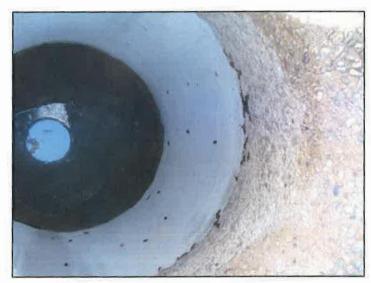
Many other manholes are located in the parkway of the public street, which residents typically consider part of their front yard. As a result, residents have placed soil, paving landscaping, or decorative walls over the tops of the manholes. After several days of work at the site, Bureau Veritas, Affordable Pipeline Services, and ICDPW crews were able to locate all manholes except MHs 31 and 33. MH 31 is believed to be located in the backyard of 2068 or 2070 Country Club Drive; it was not able to be located by tracing the tractor camera because of sharp horizontal bends in the pipe to the south and the lack of camera access to MH 30 immediately to the north. MH 33 is suspected to be located in the backyard of 2093 Murray Drive and was not accessible to the tractor camera or locating crews for similar reasons.

Crews were not able to obtain access to MHs 10, 11, 25, 27, 29, and 30 for inspection as they are located in private yards or are otherwise obstructed by private improvements. Typical situations include MHs 11 and 25, which are covered by homeowner's brick patio paving; MH 10, which is behind a small retaining wall under 1 to 2 feet of earth in the front yard of 1345 Barbara Worth Drive; and the most



extreme case of MH 29, which is under a small decorative wall and a wrought iron fence in the backyards of 2090/2092 Murray Drive.

As with the sewer mains, the manholes are also suffering from lack of regular maintenance. The interior surfaces of many of the manholes were originally lined with a bituminous coating. This coating has now largely flaked and peeled off to such a point that it is ineffective, exposing the concrete rings and cone to corrosion from hydrogen sulfide sewer gases. Many cases of concrete corrosion were observed in the field due to the trapped gas, high temperatures, and confined atmosphere. Many of the manhole troughs and shelves were deteriorating in a similar manner.



Typical concrete corrosion found within the cone of many of the CCSMD manholes. The concrete cone on the right should be smooth with no exposed aggregate, similar to the section below.

Rebar was observed in broken grade rings during the manhole inspections, indicating that the manhole rings and cones are precast reinforced concrete. As no exposed rebar or evidence of rebar corrosion was observed inside the manholes it is probable that all manholes inspected can be rehabilitated in place, as opposed to being completely replaced. Bureau Veritas recommends replacing and coating all manhole shelves, troughs, and rings internally with a corrosion resistant coating such as epoxy.

Manholes 8 and 15 had nonstandard channels that were originally constructed with such a tight angle that inspection and maintenance of the connecting sewer main is difficult to perform with modern equipment. These nonstandard angles also create increased flow resistance and increase the need for maintenance. Bureau Veritas recommends reforming the channels to reduce flow restrictions and improve accessibility for inspection and maintenance.

Other maintenance and repair issues include some damaged and/or detached manhole frames and covers (a few were replaced during the field work). These conditions pose a public safety concern and allow vandals to deposit debris in the system. A total of 21 manholes are recommended to be either raised (15) or have repairs made (6) to the frame and cover as a first order of work. Adjusting the buried manholes will make them accessible to perform other work needed on the system. Manholes with unsecured





frames should also be repaired.

At least four different sizes of manhole rings and covers were observed during the inspections. Bureau Veritas recommends using one standard size manhole frame and cover throughout the system. A standard size for manhole frames and covers increases maintenance efficiency and reduces storage of repair parts.

Manhole locations (northings and eastings) were collected with a Garmin Etrex Vista HCx handheld GPS unit with a <10 meter 95% degree of accuracy, and locations are considered approximate. We recommend surveying the location, rim, and invert elevations for all manholes in the system as one of the first orders of work in the rehabilitation of the system.

Photographs from the manhole inspections, such as those shown below, are included on compact disks in the rear pocket of this report, and the field manhole inspection logs are included as Appendix E.





Manhole 12 North



Manhole 28



Manhole 13

Manhole 9





MANHOLE (MH) SUMMARY

MH No.	Northing	Easting	Depth (ft)	Condition Issues
1	32° 48.231'	115° 25.371'	10.5	FC
2	32° 48.236'	115° 25.304'	10.5	FC
3	32° 48.242'	115° 25.234'	9.5	
4	32° 48.247'	115° 25.166'	10	FC
5	32° 48.237'	115° 25.166'	8	FC
6	32° 48.231'	115° 25.164'	Unknown	NI, BUR, ADJ
7	32° 48.188'	115° 25.151'	Unknown	NI, BUR, ADJ
8	32° 48.177'	115° 25.125'	5.5	CH
9	32° 48.185'	115° 25.098'	5	
10	32° 48.209'	115° 25.069'	Unknown	NI, BUR, ADJ
11	32° 48.167'	115° 25.147'	Unknown	NI, BUR, ADJ
12N	32° 48.132'	115° 25.091'	6	
12S	32° 48.110'	115° 25.059'	6	
13	32° 48.079'	115° 25.008'	9	FC, CGR
14	32° 48.037'	115° 24.944'	7	
15	32° 47.995'	115° 24.871'	6.5	ADJ, CH
16	32° 47.960'	115° 24.900'	6	
17	32° 47.964'	115° 24.913'	5	
18	32° 47.959	115° 24.956'	4	ADJ
19	32° 47.925'	115° 24.895'	5.5	
20	32° 47.922'	115° 24.929'	5	
21	32° 47.881'	115° 24.890'	6	
22	32° 47.848'	115° 24.885'	5	
23	32° 48.002'	115° 24.858'	6.5	ADJ
24	32° 47.986'	115° 24.834'	6.5	ADJ
25	32° 47.928'	115° 24.838'	Unknown	NI, BUR, ADJ
26	32° 47.862'	115° 24.831'	4.5	ADJ
27	32° 47.800'	115° 24.834'	Unknown	NI, BUR, ADJ
28	32° 48.235'	115° 25.196'	8	CC, FC
29	Not Available	Not Available	Unknown	NI, BUR, ADJ
30	32° 48.140	115° 25.284'	Unknown	NI, BUR, ADJ
31	Not Available	Not Available	Unknown	NF, NI, ADJ
32	32° 48.033'	115° 25.279'	6	
33	Not Available	Not Available	Unknown	NF, NI, ADJ

Manhole Condition Codes: NF = Manhole Not Found

BUR = Manhole Buried

FC = Frame/Cover Needs Repair CGR = Replace Cone/Grade Rings NI = Manhole Not Inspected

CC = Concrete Corrosion

CH = Manhole Channel Needs Repair

ADJ = Adjust MH to grade







Pump Station Inspections

The inspection and evaluation of the pump station was performed by Carl Sepponen, PE, on September 25, with the assistance of John Burnworth of ICDPW. The Country Club pump station features duplex Gorman Rupp model T4A3-B suction-lift sewage pumps powered by two (2) 1740-RPM electrical motors with belt drives and controls housed in a fiberglass enclosure. From the information available, the current pumps and motors were installed as an upgrade in 2004 to a 1994 Gorman Rupp pump station. This is at least the second replacement pump system installed



Performance of pump station data collection and operational tests. The pump station was last upgraded in 2004 and was found to be in acceptable condition, with only minor modifications required.

at this location since the pump station and wet well were originally constructed in 1974. The newer 2004 pumps continue to use the original wet well, inlet piping, force main, and electrical service.

The serial numbers of Pumps #1 and #2, respectively, are 1292436 and 1292435. The Pump Control Panel is drawing number D-4-02729, S/N 0-1502-AM. The panel is rated for 240-volt, 3-phase, 3-wire, 60-HZ. The sheaves (pulleys) on the motors are nine inches in diameter, and the sheaves on the pumps are 11 inches in diameter. Note that this data differs from that described in the operations and maintenance manual for the pumps installed in 1994, which was provided by ICDPW.

According to the Gorman-Rupp Pumps factory, the basic pumps were manufactured and shipped to Mexicali, Mexico, in 2004 for assembly with their motors and appurtenances. Further information was not available from the factory. Information regarding the pumps was requested from the Mexican factory in Mexicali, but it was not available. Precise information regarding the pump design point (flow and head) was not available. Further, the exact pump RPM is not known, but it can be estimated from other parameters. These motors and pumps are more powerful than previous units at the site, to the point that they may be contributing to distress and failures of the original force main, which was not upgraded.





The wet well consists of precast concrete manhole sections that are six feet in diameter. The condition of the wet well concrete is good to very good, considering it was originally installed in 1974. Substantial concrete corrosion from sulfuric acid is not evident from a visual inspection, although older embedded steel items are severely corroded. The concrete ground slab surrounding the wet well is in poor condition, and rebar is exposed in at least one location. Fortunately, this does not affect the functioning of the pump station. There is clear evidence of the original corroded metal embedded in the upper concrete slab. There is an opening on the east side of the wet well where the new fiberglass enclosure does not cover the original opening; it may be advisable to cover this opening with screen for safety reasons.

It is possible that the openings at the top of the wet well may be the principal reason that the wet well concrete is not badly corroded. The "natural" ventilation may prevent an accumulation of corrosive fumes, thereby preventing corrosion of the concrete. The other reason is that the sewage is relatively "fresh" and is not yet anaerobic, which reduces the corrosive effect.

The suction pipe of Pump #1 is shorter than the suction pipe of Pump #2. This was confirmed by the operator, who said that Pump #1 had its suction pipe replaced (date unknown). This is the likely reason the level control floats are set much higher than the inlet pipe, and why the sewage is always backed up in the collection system.

Based on the pump curves (Figure 1) it is assumed the motors run at a nominal 1760 RPM. The sheaves on the motors and pumps reduce the pump RPM to approximately 1450 or 1550 RPM (Figure 1).

Field measurements indicate the pump station delivers approximately 75 gallons per minute (gpm). However, inspection of the force main indicates the actual flow may be higher due to a relatively clean force main.





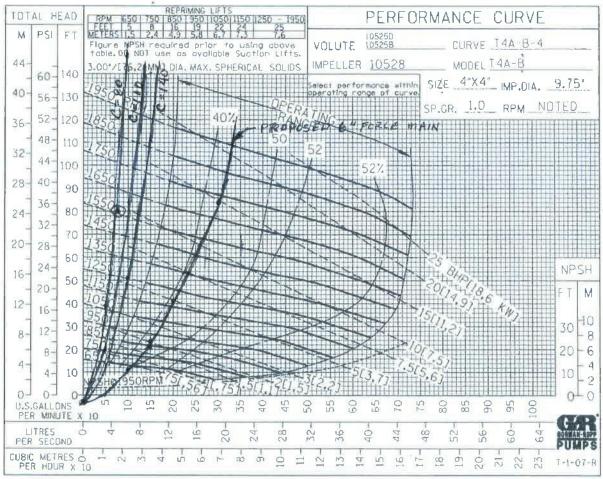


Figure 1: Gorman-Rupp T4A-B-4 Pump Performance Curve. Note the circled point on left side, which represents the operating point for the existing pumps and is outside the manufacturer's preferred operating range. Replacement of the force main with a six-inch pipeline would bring the curve back into the optimum operating range as indicated by the hand drawn curve.

The Sewer Study calculations (dated 3 October 2012, Appendix B) give the Average Dry Weather Flow as 0.02432 mgd (about 17 gpm), and the Peak Dry Weather Flow as 0.09728 mgd (about 68 gpm). Based on these calculations the pumps appear adequate for the flow from the development. This is verified by the fact that sewer overflows have not occurred when the pumps are able to operate.

The pumps are operating to the left side of the pump curve (Figure 1), in an area that is outside the operating range recommended by the manufacturer. This occurrence usually results in discharge cavitation, which can adversely affect the pump impeller and its performance. Cavitation issues can be corrected by increasing the flow rate, which could be accomplished by increasing the force main size, thereby lowering the friction head loss in the pipeline.





ICDPW's operator indicated that Pump #2 functions better than Pump #1. The Gorman-Rupp factory engineers strongly recommend that the pump impellers and wear plates be adjusted by factory technicians at least once a year to assure good performance.

The pump station does not have emergency power at the site and is at risk of overflow if there is an extended power outage.

Photographs from the pump station inspection are included on compact disks in the rear pocket of this report.

Comparison with Previous Pump Station Studies

Previous studies have been prepared to evaluate the Barbara Worth pump station and force main. The following discussion is a comparison of the recommendations of this evaluation with the recommendations of two previous reports, both of which are attached to the *Country Club Sewer Maintenance District Informational Report* (June 2006). The two previous reports are:

- The Master Plan of Sewer (1998) by Kennedy Jenks Consultants (KJC)
- 2006 Barbara Worth Wastewater Force Main Installation and Sanitary Sewer Pump Station Replacement Report by the Holt Group, Inc.

The Master Plan of Sewer (1998) by KJC presents a sewer plan for the year 2020, including future development. The following text is a summary of the KJC report that is in the District Informational Report:

"The report concluded that the Barbara Worth Pump Station and its force main are undersized and recommends increasing the 4-inch sewer force main pipe to an 8-inch pipeline to accommodate the existing demands placed on the system within the current boundaries of the CCSMD."

There is no detailed evaluation of the Barbara Worth Pump Station included in the KJC report. The pump station is assumed to have a 400 gpm existing capacity per available information (source not given) and 750 gpm is required for future development.

Immediately after addressing the Barbara Worth pump station deficiencies, the report includes the following disclaimer on page 5.5:

"It should be noted that since actual pump operating capacities and wastewater flows were not provided, these results are based on several assumed or simulated conditions. Although, these results provide an indication of probable deficiencies, actual field measurements and testing should be conducted prior to final remedial design."





The 2006 report by the Holt Group recommended replacing the existing 4-inch sanitary sewer pipeline with a 10-inch force main in order to facilitate future development and expansion. The following excerpt is from pages 6 and 7 of that report:

"In this report the Holt Group, Inc. concluded that during the last 10-years the existing wastewater pump station has continued to deteriorate and periodically fail. The maintenance cost, time and effort devoted to keep the pump station in a working condition is significant and far in excess of what is normally required. It is apparent that the Pump Station has exhausted its useful life and should be replaced as soon as possible. The physical P.C.C. wet well structure is deteriorated and at the point of collapse. The wet well is no longer salvageable. The electrical panels and pumping units are also aged, outdated, inefficient and in a deteriorated condition. The replacement of the existing 4-inch diameter force main with a 10-inch diameter force main would allow for the installation of the wastewater pumps at a lower total dynamic head requiring less energy to operate. The pumps would produce a greater flow at less total dynamic head (and pressure) resulting in less maintenance. The electrical costs associated with the wastewater pump station would decrease even though the flow capability of the pump station would be dramatically increased (from 400-gallons per minute to 750-gallons per minute).

The 10,200 lineal foot wastewater force main extending downstream of the Pump Station has been a source of pipeline ruptures, pipeline clogs, and pump maintenance problems for over 2 decades. The continued rupturing of the 4-inch wastewater force main results in health and safety issues in the vicinity of the Imperial Irrigation District Canal Network. It would be prudent for Imperial County to replace the existing undersized 4-inch diameter force main with a heavy wall 10-inch diameter AWWA C-900, Class 150 PVC wastewater force main as soon as possible."

The 2006 Holt Group report indicates the pump flow rate was not checked in the field or with the operator. Rather, that report took information directly from the 1998 KJC report (which is unsupported). There is no record of pump serial numbers. No contact with the pump manufacturer is mentioned, there is no pump curve in the report, and no system curves are provided.

In conclusion, all the reports recommend the force main be replaced with a larger size force main. We recommend a 6-inch pipe, the KJC report recommended an 8-inch pipe, and the Holt Group recommended a 10-inch pipe to provide for future development. Our analysis indicates that six inches is the optimum pipe size. It provides a large increase in capacity, allows the pumps to function much more efficiently, and will reduce the risk of force main ruptures in the future.

Our report recommends only minor improvements to the pump station, whereas the Holt Group report recommended the installation of a new pump station. Note that the





Holt Group considered additional flow from future development, which our report does not include. The consideration of additional flow is one of the main reasons the Holt Group's report recommends a new pump station. The Holt Group report concluded the wet well was in such poor condition that it should be replaced. Our recommendations are based on a significantly more thorough analysis than those of the Holt Group. It should be noted that although the pump station and the wet well are not in fine or new condition and have some deficiencies, they are adequate for current needs if the force main is upgraded and some other minor improvements are made.

Our recommendations are based a detailed analysis of the present conditions, whereas the previous reports spent little or no effort in researching the actual pump station condition or gathering field data. No detailed analysis was conducted by KJC or by the Holt Group on the pump station, although some head loss calculations were prepared to show that the existing 4-inch force main is inadequate.





Force Main Inspection

Initial inspection and evaluation of the sewer force main was conducted by Philip Kern, PE, with the assistance of Carl Sepponen, PE, and Affordable Pipeline Services staff on September 25, 2012. One of the main challenges of evaluating the condition of the existing force main is, guite simply, accessibility. Without physically excavating and cutting the existing force main there are only four points at which to inspect the interior of this small diameter pipeline: the force main at the pump station, the discharge manhole at Kamm Road and Gowling Road, and two



Initial video inspection of the force main with a push camera. Pump station is on the left and force main is on the right. Note the sharp 90-degree bend in the force main next to the fence.

cleanouts located on either side of the Alamo River. Neither ICDPW nor Bureau Veritas staffs were able to confirm location of the cleanouts at the Alamo River. Further, the four-inch diameter pipeline is too small to admit a tractor camera for inspection.

These conditions limited the initial inspection opportunities to the use of a small specialized "push camera" inserted from either end of the force main. On September 25 a trailer jetter was used at the Kamm Road manhole to drag the push camera into the main, with video data collected as the camera was withdrawn from the main. The crew discovered that the force main was not constructed on a straight grade as indicated on the plans but rather "porpoises" up and down with high and low spots in the profile. These high and low spots prevent full draining of the line as well as clear visibility for inspection. The



Second video inspection of the force main along Barbara Worth Drain, pump station is in the left background. The end of the pipeline can be seen in the trench, one line in the pipe is the video cable, the other is the jetter line used to pull the camera into the pipe.





portions of this section of force main which were visible on the video appeared to be in good condition, and no ruptures have been reported near the north end.

Unfortunately, two sharp 90-degree bends on the pump station discharge line prevented insertion of the push camera and jetter any significant distance into the south portion of the force main during the September 25 inspection, even with removal of a section of the discharge line at the pump station. ICDPW staff has reported three ruptures in recent memory of the force main in this section of the pipeline so it was a priority for inspection. A small washout about 200 feet north of the pump station along Barbara Worth Drain was reportedly the location of the last pipeline failure. The short distance that was able to be inspected showed a fairly thick slime coating on the interior of the pipe, which masked details of the condition of the PVC pipeline.

At the request of the Director of ICDPW, the crew returned to the site on October 25. ICDPW crews excavated and removed an eight foot section of the force main approximately 200 feet north of the pump station and the Affordable Pipeline Services crew inserted a push camera, again using the trailer jetter to draw it into the pipeline. The pipeline was accessed 308 feet to the north and 178 feet to the south toward the pump station. The results were similar to the previous inspection in that the force main was not installed on a grade and would not fully drain. As a result, the camera was submerged for much of the time and the interior of the pipeline could not be seen clearly. The portions that were visible appeared to be in good condition, with some debris noted in the pipeline and the slime coating appearing to diminish as the camera traveled further from the pump station.

The eight-foot portion of the pipe that was excavated and removed was particularly instructive. This section contained a repair coupling where a previous break had been repaired; had a 4-inch to 6-inch lengthwise crack on the spigot end where it would normally be protected by the bell end of the next section of pipe; and also exhibited some splintering from damage incurred by the backhoe when it was removed, which is unusual for PVC pipe. The force main pipe was inscribed with the following description: 4" J-M Ring-Tite PVC 1120 IPS 125 PSI SDR 32.5 ASTM D-2241. By current standards this is relatively thin-wall, light-duty pressure pipe that would be considered marginally acceptable for this application. No sand bedding, tracer wire, or warning tape was observed within the excavation, which is not consistent with current public works standards. Further, there is no information available regarding compaction of the trench backfill. PVC pipe, being a flexible pipe, is particularly sensitive to the type and compaction of the bedding and backfill as it uses these elements to resist internal forces. Use of uncontrolled and/or poorly compacted native material for bedding can create stress points along the pipeline, which can lead to pipe failures. Stress points can





be even more of a concern on a force main which experiences pressure spikes due to pump operations, as opposed to a gravity-fed water supply main which would normally see consistent pressure levels. PVC pipe is also sensitive to ultraviolet (UV) radiation if installed or stored outdoors for extended periods without protection. Older, above-ground sections of pipe at the pump station had some indications of UV degradation, although it is not known if UV exposure contributed to the cracking or splintering of the force main sections that were inspected. It is more likely that the crack was caused by rough handling of the pipe at the time of installation.



Existing 4-inch force main pipe removed from the trench. Note the splintered section on the left, repair coupling in the middle, and the barely visible chip and crack in the spigot end of the shorter section on the right.

The force main pipe was found to be a JM Eagle brand I.P.S. Pressure PVC Pipe conforming to ASTM D2241 for standard dimension ratios (SDRs). It is available in varying strengths, including SDR 64 (63 psi), SDR 41 (100 psi), SDR 32.5 (125 psi), SDR 26 (160 psi), SDR 21 (200 psi), and SDR 17 (250 psi). This force main is a SDR 32.5 (125 psi pressure rating) pipe with an internal diameter of 4.207 inches. For comparison, 4-inch PVC Schedule 40 has an ID of 4.026 inches (maximum working pressure of 220 psi), and Schedule 80 has an ID of 3.826 inches (maximum working pressure of 320 psi). The 4-inch ductile iron pipe (DIP) inside the Gorman-Rupp pump station has a nominal pressure rating of 350 psi.

There are several reasons why the force main may be breaking and leaking:

- The line is operating at a pressure higher than the original design. The
 pumps installed in 1994 were design for 200 gpm at just 21 feet of head
 according to the operations and maintenance (O&M) manual. The pumps
 installed in 2004 have a much high rpm and produce a higher pressure. A
 higher pressure, combined with any of the factors listed above, can lead to
 breaks.
- Pressure surges are occurring when the pumps stop. Each time the pumps start and stop, but especially when they stop, a pressure surge occurs





that increases the pressure in the pipeline.

High temperature of the water and / or soil may be reducing the strength
of the PVC. High temperature decreases the strength and therefore the
pressure rating of the pipe as follows:

Temperature (°F)	De-Rating Factor
73	1.00
80	0.88
90	0.75
100	0.62
110_	0.51
120	0.40
130	0.31
140	0.22

For example, if the PVC temperature is 90 degrees, the pressure rating is decreased from 125 psi to 94 psi. Given the ambient temperatures in the summer months in the Imperial Valley, the force main pipe could be at 50 to 75 percent of its rated strength.

- Poor installation may have caused breaks. Poor installation can stress a
 PVC pipe and create a weak point and eventually the pipe may break under
 high pressure.
- Storage in sunlight prior to installation may have caused the PVC to become brittle. It is well known that PVC pipe should be stored away from sunlight prior to installation. The UV rays affect the chemical structure of the PVC and it can become brittle and can easily be shattered and broken. PVC pipe is usually stored in bundles, and only some of the pipe lengths are subject to high UV exposure. Those subject to the high UV exposure are the ones most likely to break.

Video data from the force main inspection are included on compact disks in the rear pocket of this report, and inspection logs from the force main inspection are included as Appendix F.





Conclusions and Recommendations

The following recommendations are based on analysis of data collected in the field and through research of available documentation. Although much of this work could be performed by ICDPW forces, the repair cost estimates in Appendix D presume that these tasks would be accomplished by outside contractors. As the entire CCSMD system has not yet been inspected, allowances and contingencies have been made in the estimate. These costs are considered preliminary in nature and suitable for planning purposes only.

Pipelines

The principal issue with the gravity pipelines is their very flat slope, which will require regular long-term maintenance to effectively function. It is not considered economical to replace the entire collection system to remedy this issue. Other than implementation of a long-term regular maintenance plan, the following capital repairs are recommended:

- · Locate remaining sewer mains and manholes
- Complete cleaning of all pipelines with Vactor truck
- · Complete inspection of all pipelines
- Perform spot repairs on root intrusions
- Install grease traps on commercial laterals
- Inform residents of pipeline location and remove trees over pipelines
- Replace sag portions of pipe at the proper grade
- Replace undersized mains with 8-inch pipe
- Replace pipelines with horizontal bends
- Replace drop manhole plumbing

Manholes

The lower portions of existing manholes were found to be in generally good condition. Capital repairs for manholes are focused on providing access for maintenance and repairing or replacing deteriorated items in the upper portions.

- · Survey manhole locations, rim, and invert elevations to establish grades
- Adjust to grade and secure manhole frame and covers, replace with standard frame and cover if necessary
- Modify utilities, irrigation lines, paving and structures which are obstructing manhole openings





- Rechannel manhole troughs for proper flow, inspection and maintenance access
- Replace corroded manhole cones with new T-lock or epoxy-coated cones
- Remove steps and coat interior, trough, and shelf of all manholes with T-Lock or epoxy coating

Pump Station

The pump station was found to be in acceptable condition with adequate capacity. The 8-year old pumps do not need to be replaced, although some of the following observations and recommendations are important to improve pump performance and life expectancy.

- The Pump #1 suction pipe should be replaced with a longer pipe to match that of Pump #2, and the level control floats should be set much lower so that the collection system pipes drain during every pumping cycle. The start level can be set several feet above the inlet pipe, but the stop point should be set below the inlet pipe level. These changes will improve the collection system capability and reduce the amount of sediment in the collection system. Although it is best to have both the start and stop levels below the inlet pipe, it is not always possible. In this case the floats are located not much below the inlet pipe, and the suction-lift pumps function better when the start level is not set too low.
- Some of the gauges need to be replaced. Each pump should have two
 working pressure gauges one gauge on the discharge side and one gauge
 on the suction side of the pump. Having two gauges is the best way to
 quickly evaluate any pump problems that may occur.
- The pump impellers should be inspected and adjusted by a factory technician annually (or at least every two years; the official Gorman-Rupp recommendation is to have the pumps checked every six months).
 Gorman-Rupp should be contacted to conduct this service.
- The concrete wet well does not need to be replaced, although epoxy lining the wet well for longevity is recommended.
- Although the concrete base slab around the wet well is in poor condition, replacement is not critical. If its condition interferes with the operator's work at the station, it is recommended that the concrete base slab be replaced.
 The replacement cost is not high and could be easily accomplished.





- The pump station should have some means of functioning during a prolonged power outage. If not already provided, it is recommended that the electric service be configured for connection to a portable generator, and a portable generator be purchased or a standby rental agreement be made with a local company.
- Install screen across wet well opening(s)

Force Main

The force main has been problematic in the past and has had several failures. In addition to being undersized, the pipe strength is marginal for this application and it was not installed to current standards. The following recommendations are suggested:

 Replace the existing 10,000 feet force main with a stronger and larger pipeline. It is recommended the force main be replaced with a 6-inch PVC pipe with a higher pressure rating and to current standards, such as a minimum of AWWA C-900 Class 150. The AWWA C-900 pipe has higher safety factor than the IPS pipe presently installed.

In addition to the higher safety factor, increasing the pipeline size and reducing the friction headloss is recommended to increase the pump flow rate and move the operating point near or into the recommended operating range. This will eliminate impeller cavitation. As shown in Appendix A, the plot on the pump curve shows an operating point of 260 gpm at 60 feet TDH. The pipeline velocity is 2.8 fps, well above the recommended minimum of 2.0 fps.

As an alternative to replacing the entire force main, the section under the Alamo River could be left in place. However, if there is a history of pipeline breaks in this section under or near the Alamo River, this alternate approach is not advisable because it may cause additional pipeline breaks.

- Replace sharp 90 degree bends in force main at pump station with larger radius bends
- Install cleanouts at regular intervals for inspection and maintenance





References

- 1. Plans for Interceptor Sewer, City of Holtville, prepared by Wilsey & Ham, Sheets 1-5, approved May 21,1974
- 2. Plans for Improvements, Tract No. 839, prepared by The Parker-Riddle Co., sheets 1-4, approved May 23, 1978

Credits

The following personnel contributed to the data collection, field investigations and development of this report:

Imperial County Department of Public Works
John Burnworth
David Krommenhoek
Martin Lang
Affordable Pipeline Services
Duane Johnson, Supervisor
Nick Provencio, Camera Operator
Mark Enrique, Video Assistant
Bureau Veritas
Bill Grigsby, PE, Manhole Evaluation
Carl Sepponen, PE, Pump Station and Force Main Evaluation
Steve Dodge, Graphics
Ruth Licht, Report Preparation
Philip Kern, PE, Project Manager





Appendix A

Pump Station and Force Main Calculations





Pump Station and Force Main Calculations

Pump Speed (RPM)

The Pump RPM can be calculated by knowing the motor RPM and diameter of the sheaves (pulleys):

Motor RPM = approximately 1760 RPM

Motor sheave diameter = 9.0 inches

Pump sheave diameter = 11.0 inches

Pump Speed = Motor RPM x (Motor sheave diameter / Pump sheave diameter)

 $= 1760 \text{ RPM x } (9.0^{\circ} / 11.0^{\circ})$

= 1440 RPM, say 1450 RPM (which is shown on the Gorman-Rupp pump curves)

System Curves (to graph on pump flow vs. head chart)

The force main is mainly 4-inch J-M Ring-Tite PVC 1120 IPS 125 PSI SDR 32.5 ASTM D-2241, and the piping at the pump station is 4-inch Ductile Iron Pipe (DIP). The internal diameter of the PVC pipe is 4.207 inches according to the manufacturer's data. The internal diameter of the DIP is 4.15 inches, but the difference will be ignored. Since the length of the DIP is insignificant compared to the long PVC force main, the entire force main will be assumed to have an internal diameter of 4.207 inches.

The length of the force main is 9,440 feet. Adding 523 feet for station equation equals 9,963 feet.

Equivalent lengths are calculated for the minor losses and added to the actual force main length for the following head loss calculations:

Item	Number	Equivalent Length (Ft) Each	Total Equiv. Length (Ft)		
90° bend	5 + 4 = 9	13	117		
45° bend (or less than 90°)	6	5	30		
Plug valve	1	10	10		
Tee (run)	3	8	24		
Tee (branch flow)	1	22	22		
Total Head Loss Lengths			203		





Total Equivalent Length = 9,963 feet + 203 feet = 10,166 feet

Prepare System Curves for C = 140, C = 110, and C = 80 for comparison

Static Head

Ground elevation at pump station from plans is approximately 945.0 feet

The force main discharge elevation is given as 933.70 feet

The distance from the pump station ground elevation to the water levels during pumping varies from approximately 82 to 116 inches (or elevations 938.2 feet to 935.3 feet)

Therefore, the static lift varies from minus 4.5 feet to minus 1.6 feet (the discharge is lower than the wet well level). Alternatively, the static lift is -3 feet, ± 1.5 feet.

Calculate Headloss and Total Dynamic Head (TDH) for various flows at 3 "C" values using Hazen-Williams equation

Friction loss = $((0.2083 \text{ x} (100/\text{C})^{1.852} \text{ x} (flow)^{1.852}) / (diameter)^{4.8655}$

Diameter = 4.207 inches in all cases

		C = 140	
Flow (gpm)	Headloss (ft/100 ft)	Headloss (feet)	Total Dynamic Head (feet)
0	0	0	-3
50	0.144	15	12
100	0.520	53	50
150	1.10	112	109

C = 110										
Flow (gpm)	Headloss (ft/100 ft)	Headloss (feet)	Total Dynamic Head (feet)							
0	0	0	-3							
50	0.225	23	20							
100	0.81	82	79							
150	1.72	175	172							





C = 80										
Flow (gpm)	Headloss (ft/100 ft)	Headloss (feet)	Total Dynamic Head (feet)							
0	0	0	-3							
50	0.406	41	38							
100	1.466	149	146							
150	3.107	316	313							

The calculated TDH / flow points are plotted on the pump curve as shown on the next page. The 3-system curves are labeled for each of the "C" values.

Operating Point

During the field investigation the flow and head was estimated as follows:

The wet well was pumped down to below the inlet pipe using Pump #2. The wet well depth was observed and recorded over an 11-minute period and averaged 13.3 gpm. The drawdown was observed for several minutes and recorded after the pump started; the pumping rate was 61.6 gpm. Then the average inflow was added to the observed pumping rate to account for the sewage coming into the wet well while the pump was running.

The pumping rate was = 61.6 gpm + 13.3 gpm = 74.9 gpm, say 75 gpm

The pumps usually operate at a pressure of 26 to 28 psi (60 to 65 feet), which is taken at the top of the pumps, about 3 feet above the pump station ground slab. To get the TDH the distance from the pressure gauge to the water level below is added to the pressure reading:

TDH = 62 feet + 3 feet + 14 feet = 79 feet at flow of 75 gpm - This point is also plotted on the pump / system curves.

Conclusions from the graph

Looking at the graph it appears the pump is likely running at 1550 rpm (not 1450 rpm as calculated above). But other field readings and / or measurements could be in error, so the actual value of the pump rpm is uncertain.

One can see that the system is running at a "C" value of approximately 90,





Force Main Velocity

The velocity in the force main at different flows is:

At 50 gpm = 1.15 fps

At 100 gpm = 2.31 fps

At 150 gpm = 3.46 fps

The velocity of the sewage in the force main with a flow of 75 gpm is only 1.7 fps, which is below the recommended minimum of 2.0 fps to maintain sewage solids in suspension.

Calculation of Flow and TDH for Proposed 6-Inch Force Main

Assume a new 6-inch PVC force main with ID = 6.13 inches

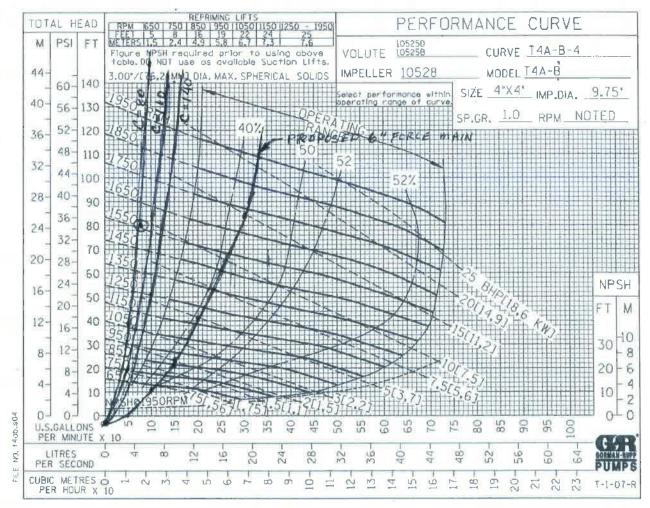
C = 120

Flow (Gpm)	Headloss (Ft/100 Ft)	Headloss (Feet)	Total Dynamic Head (Feet)
0	0	0	-3
50	0.031	3	0
100	0.111	11.4	8
150	0.235	24	21
200	.40	41	38
300	0.848	86	83

The plot on the pump curve shows an operating point of 260 gpm at 60 feet TDH. The pipeline velocity is 2.8 fps, well above the recommended minimum of 2.0 fps.











Appendix B

CCSMD Sewer Study







Project: 18020.06 P. Kern

Country Club Sewer Maintenance District

Sheet 1

Sewer Study

3-Oct-12 Date

Of

Line	From	То	Popul. per DU	1		Popul. Cumulative	Sewage Per Capita/Day (gpd)	Average Dry Weather Flow (mgd)	Peaking Factor	Peak Dry Weather Flow (mgd)		Design Slope (%)	Normal Depth, dn (in)	% Full dn/D	Flow Velocity (ft/s)
1	MH 27	MH 15	3.0	24	72	72	80	0.00576	4.0	0.02304	8	0.25	1.32	17%	0.95
2	MH 22	MH 15	3.0	33	99	99	80	0.00792	4.0	0.03168	8	0.25	1.55	19%	1.04
3	MH 15	MH7	3.0	0	0	171	80	0.01368	4.0	0.05472	8	0.25	2.03	25%	1.22
4	MH 10	MH 7	3.0	14	42	42	80	0.00336	4.0	0.01344	8	0.25	1.00	13%	0.80
5	MH 7	MH 5	3.0	0	0	213	80	0.01704	4.0	0.06816	8	0.25	2.26	28%	1.30
6	MH 32	MH 5	3.0	27	91	91	80	0.00728	4.0	0.02912	8	0.25	1.48	19%	1.01
7	MH 5	MH1	3.0	0	0	304	80	0.02432	4.0	0.09728	8	0.25	2.72	34%	1.43

Notes:

- 1. Assume 50% duplexes on Anderholt Rd. , all duplexes on Country Club Drive, 10 EDUs for BWCC
- 2. Line sizes and design slopes assumed pending completion of survey
- 3. Generation rate and peaking factors per City of SD Sewer Design Guide
- 4. Manning's n=0.013 for all lines



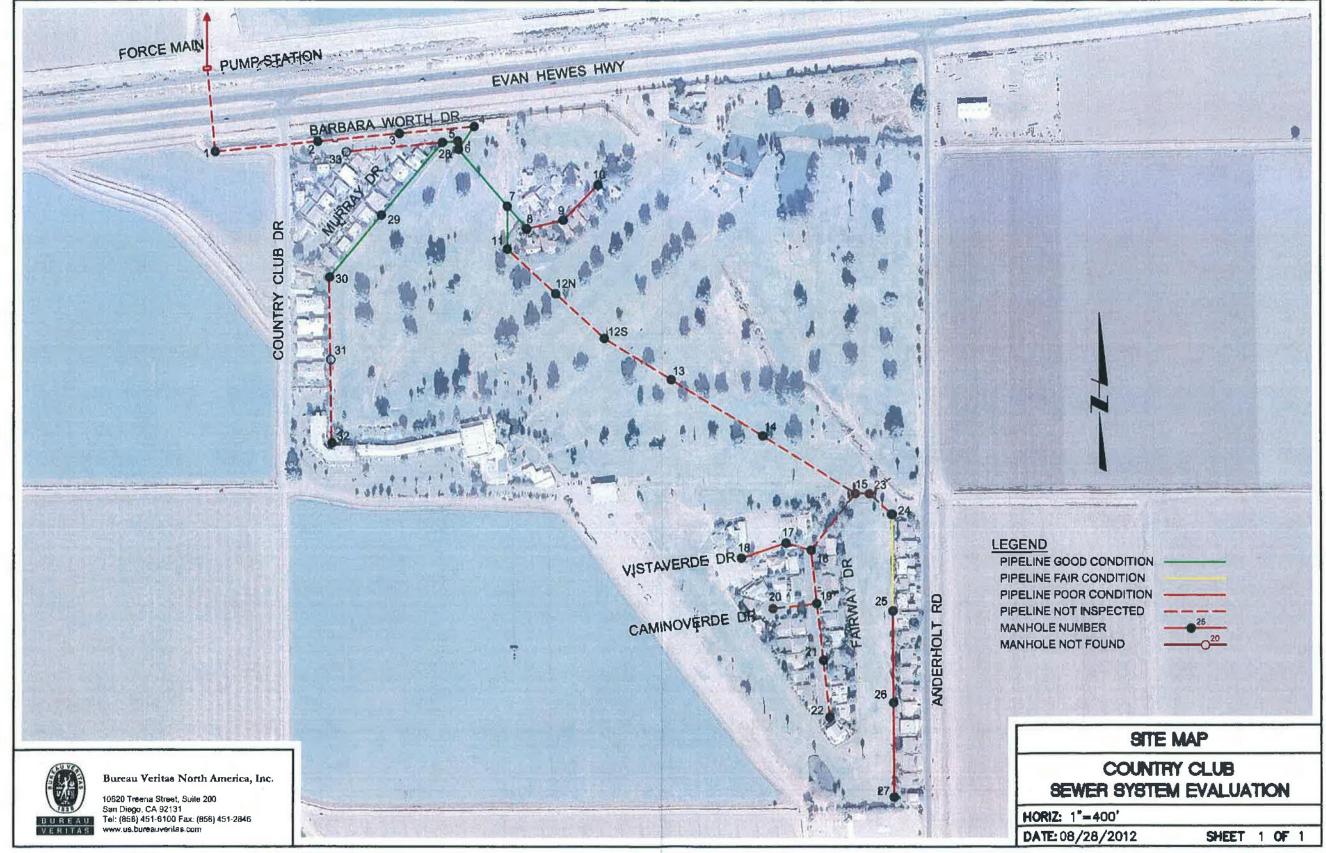


Appendix C

CCSMD System Map











Appendix D

Repair Cost Estimate





COUNTRY CLUB SEWER MAINTENANCE DISTRICT PRELIMINARY REPAIR COST OPINION

Item Description	Quantity	Unit	Unit	Total
PIPELINES			Cost	Cost
Locate Sewer Mains and MHs	1	LS	\$5,000	\$5,000
Clean Sewer Mains	5	Days	\$3,000	\$15,000
Inspect Sewer Mains	3	Days	\$2,500	\$7,500
Spot Repairs (Root Intrusions, etc.)	4	Each	\$5,000	\$20,000
Install Grease Trap	1	Each	\$5,000	\$5,000
Inform Residents of Sewer Locations	1	LS	\$5,000	\$5,000
Replace Sag Portions of 8" sewer to grade	2,000	LF	\$100	\$200,000
Replace 4" VCP with 8" PVC	500	LF	\$100	\$50,000
Replace 8" VCP Bends with 8" PVC pipe	200	LF	\$100	\$20,000
Replace drop MH plumbing	1	EA	\$5,000	\$5,000
				MANHOLES
Survey Manhole Locations	1	LS	\$7,500	\$7,500
Adjust MH to grade, replace frame and cover	17	EA	\$2,000	\$34,000
Modify Private Facilities Obstructing	1	LS	\$100,000	\$100,000
Manholes			61	
Rechannel MH Troughs	4	EA	\$2,500	\$10,000
Replace MH Cone	30	EA	\$4,000	\$120,000
Line Interior of MH with Epoxy	34	EA	\$2,000	\$68,000
				P STATION
Reset Float Switch Levels	1	LS	\$1,000	\$1,000
Extend Suction Line for Pump #2	1.	LS	\$3,000	\$3,000
Install Screen on Wet Well Opening	1	LS	\$1,000	\$1,000
Line Wet Well with Epoxy Coating	1	LS	\$10,000	\$10,000
	20 0 10 10	18.3		DRCE MAIN
Locate Existing Cleanouts	1	LS	\$2,500	\$2,500
Replace Sharp Bends at Pump Station	_1	LS	\$5,000	\$5,000
Install Force Main Cleanouts	20	EA	\$2,000	\$40,000
Replace 4" PVC with 6" PVC force main	10,000	LF	\$50	\$500,000
Subtotal Construction	w- 10 -			\$1,234,500
Construction Contingency	20%		ST ST ST A	\$246,900
Administration & Design	15%			\$185,175
GRAND TOTAL				\$1,666,575





Appendix E

Manhole Inspection Logs





	MA	NHOLE INSPECT	ION REPORT	9-20	15
MANHOLI WEATHER		Barbra W	INSPECTOR(S):	DATE: 9-25-	
MANHOLI CONDIT EVIDENCE CORBEL	ER: 27 INCHES HOLES IN COVER: ION OF FIT: LOOSE	TIGHT DE BOLTED DE S DE NO DE SEN DE	DEPTH TO INVERT FT. IN.	+ con	heard aga exposed
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TYPE	DISTANCE FT	DISTANCE FT	DISTANCE FT	DISTANCE	FT
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COMMENT	rs:				

nanhole odd

	M	ANHOLE INSPECT	ION REPORT	DATE: 9-24-12
MANHOLI WEATHER		Barbra W	INSPECTOR(S):	DATE: 4-24-12
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	ION: GOOD □ DE DE OF LEAKAGE: YE		ТУР	CAL MANHOLE
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ENTRANCE	FROM MH#	FROM MH #	FROM MH #	TO MH#
DATA	DROP LINE	DROP LINE	DROP LINE	
	DISTANCE FI	STATESTAL DESIGNATION OF THE PROPERTY OF THE P	DISTANCE F	DISTANCE FT
TYPE				
DIAMETER				
FLOW				

MANHOLE INSPECTION REPORT DATE: 9 STREET: Barken WO WEATHER: MANHOLE COVER DIAMETER: 27 INCHES COVER NO. OF HOLES IN COVER: FRAME CONDITION OF FIT: LOOSE | TIGHT | SEALED | BOLTED | EVIDENCE OF LEAKAGE: YES ☐ NO - CORBEL MANHOLE FRAME DEPTH CONDITION: SOUND M BROKEN TO EVIDENCE OF LEAKAGE: YES INO 'A **NVERT** FT./ IN. CORBEL AND WALLS CONSTRUCTION: PRECAST M BRICK CONDITION: GOOD | DETERIORATING | EVIDENCE OF LEAKAGE: YES NO Z BENCH WALLS **BENCH WALLS** CONDITION: GOOD | DETERIORATING 12 TROUGH DEPOSITS: MUD 💌 DEBRIS 🔼 SLUDGE 🔼 DEPTH OF DEPOSITS: 4" INCHES INVERT STEPS CONDITION: GOOD | DETERIORATING A EVIDENCE OF DEBRIS ON STEPS: YES NO TROUGH CONDITION: GOOD DETERIORATING A TYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES NO X INFLOW AND INFILTRATION EVIDENCE OF INFLOW: YES WINO DEVIDENCE OF SURCHARGING: YES X NO DE **INCHES** INCHES ABOVE INVERT: EVIDENCE OF INFILTRATION: YES INO ESTIMATED FLOW RATE: QPM LOCATION/DESCRIPTION OF INFILTRATION: PIPE **INCOMING LINES OUTGOING LINE** FROM MH# 4 TO MH# ENTRANCE FROM MH# FROM MH# DROP LINE [DATA DROP LINE [DROP LINE DISTANCE DISTANCE FT DISTANCE FT DISTANCE FT TYPE DIAMETER

COMMENTS:

FLOW

MANHOLE INSPECTION REPORT	
MANHOLE INSPECTION REPORT MANHOLE III PARTIE DATE: 9-24-12 WEATHER: Hot Sunny INSPECTOR(S): ON S	
MANHOLE COVER DIAMETER: 24 INCHES NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE TIGHT WIFT 1999 EVIDENCE OF LEAKAGE: YES NO NO NO NO NO NO NO N	
MANHOLE FRAME CONDITION: SOUND BROKEN TO EVIDENCE OF LEAKAGE: YES NO INVERT OCCUPATION NO MAN AND MAN	
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DATA DROP LINE DROP LINE DROP LINE	
DISTANCE FT DISTANCE FT DISTANCE FT	
TYPE	
DIAMETER	
FLOW	
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COMMENTS: 19" grc in & out

MANHOLE INSPECTION REPORT
WEATHER: Baybra Worth Dove Water Houng INSPECTOR(S): MAN
MANHOLE COVER DIAMETER: 24 INCHES NO. OF HOLES IN COVER: 1 CONDITION OF FIT: LOOSE TIGHT SEALED BOLTED SEALED BOLTED EVIDENCE OF LEAKAGE: YES NO 10
MANHOLE FRAME CONDITION: SOUND BROKEN TO EVIDENCE OF LEAKAGE: YES NO XI INVERT 4 FT. IN.
CORBEL AND WALLS CONSTRUCTION: PRECAST TO BRICK CONDITION: GOOD CONDITION: GOOD CONDITION: DETERIORATING TO EVIDENCE OF LEAKAGE: YES NO TO BENCH WALLS
BENCH WALLS CONDITION: GOOD TO DETERIORATING TROUGH DEPOSITS: MUD DEBRIS SLUDGE DEPTH OF DEPOSITS: INCHES
STEPS CONDITION: GOOD DETERIORATING VOICE EVIDENCE OF DEBRIS ON STEPS: YES NO
TROUGH CONDITION: GOOD DETERIORATING TO TYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES NO TO TYPICAL MANHOLE
INFLOW AND INFILTRATION EVIDENCE OF INFLOW: YES AND DEVIDENCE OF SURCHARGING: YES NO DEVIDENCE OF INFILTRATION: INCHES EVIDENCE OF INFILTRATION: YES DO DE ESTIMATED FLOW RATE: GPM LOCATION/DESCRIPTION OF INFILTRATION:
PIPE INCOMING LINES OUTGOING LINE
ENTRANCE FROM MH # 26 FROM MH # TO MH # TO MH #
DATA DROPLINE DROPLINE DROPLINE FT DISTANCE FT
TYPE
DIAMETER
FLOW 1
COMMENTS: COT TO MH # C
COCK FOACHES

	MA	ANHOLE INSPECT	ION REPORT	0.04	10	
MANHOLE WEATHER		Barbra 1	INSPECTOR(S):	DATE: 9-24	-	
	R: INCHES	Manhole	marked of	Puried	Philo to	de.
CONDIT		BOLTED [<u></u>	FRA	ME	
EVIDENO	DE OF LEAKAGE: YE	S NO D	DEPTH	← core	BEL	
CONDIT	ON: SOUND BF CE OF LEAKAGE: YE		TO INVERT FT. IN.	STEPS		
CONSTR	ND WALLS UCTION: PRECAST ON: GOOD DEDE	TERIORATING		SENCH WALLS		
DEPOSIT	ALLS ON: GOOD [] DET TS: MUD [] DEBRI DF DEPOSITS:	IS □ SLUDGE □	TR	HOUGH	7	
	ON: GOOD DE CE OF DEBRIS ON ST		, 🗼	0		
	ON: GOOD DE		ТҮР	PICAL MANHOLE		
EVIDENCE EVIDENCE	ND INFILTRATION CE OF INFLOW: YES ABOVE INVERT: CE OF INFILTRATION: ON/DESCRIPTION OF		CE OF SURCHARGIN			
PIPE		INCOMING LINES	-	OUTGOING LINE		
1	FROM MH #	FROM MH #	FROM MH#	_ TO MH #		
DATA	DROP LINE	DROP LINE	DROP LINE	T. DIOTANGE		
TYPE	DISTANCE FT	DISTANCE FT	DISTANCE F	T DISTANCE	FT	
DIAMETER					_	

FLOW

Photo falcel MANHOLE INSPECTION REPORT

MANHOLE	# T STREET.	Barbara W	arth	Dance	'	DA1E:	
WEATHER	#: 7 STREET:	ortha Drive	A - 1V :	INSPECT	OH(S):		
MANHOLE DIAMETE NO. OF H	COVER ER: INCHES HOLES IN COVER: ON OF FIT: LOOSE			-		COVER	FRAME
EVIDENC	E OF LEAKAGE: YE		•)=		CORBEL
	FRAME ON: SOUND BF CE OF LEAKAGE: YE			DEPTH TO INVERT FT. IN.		STEPS	\
CONSTR	IND WALLS UCTION: PRECAST ON: GOOD DET EE OF LEAKAGE: YE	TERIORATING [l	-	- BEN	ICH WALLS	
DEPOSIT	ALLS ON: GOOD DE S: MUD DEBRI DE DEPOSITS:	S SLUDGE			TROL	IGH	
	ON: GOOD DE					0	
	ON: GOOD DE DE OF LEAKAGE: YE		3		TYPIC	AL MANHOL	E.
EVIDENC INCHES A EVIDENC	ND INFILTRATION E OF INFLOW: YES ABOVE INVERT: E OF INFILTRATION: IN/DESCRIPTION OF	YES NO					IO GPM
5155		machine cuir				OUTCOIN	V INE
PIPE ENTRANCE	FROM MH #	FROM MH #	<u>.s</u>	FROM MH	#	OUTGOING	- CHAR
DATA	DROP LINE	DROP LINE	— I	DROP LIN			
	DISTANCE FT		FT	DISTANCE	FT	DISTANCE	FT
TYPE							
DIAMETER							
FLOW							

	MA	NHOLE INSP	ECTI	ON REPORT	a	- 11	
	Q				DATE: <u>4</u>	-24-1	ス
MANHOLE #:	STREET:			_INSPECTOR(S):	n M		
WEATHER: / g	WAN) +	p-T		_INSPECTOR(S):	on of		
MANHOLE COVER DIAMETER: Q I NO. OF HOLES I CONDITION OF I	INCHES COVER: IT: LOOSE	— л			COVER	FRAME ?	rodek
EVIDENCE OF LI		S NO TO]	Ī		- CORBEL	ſ
MANHOLE FRAME CONDITION: SO EVIDENCE OF LI	DUND □ BFEAKAGE: YE	ROKEN 65 S NO 17A	110 del	DEPTH TO INVERT FT. IN.	STEPS	a	garegate posic
CONSTRUCTION CONDITION: GO EVIDENCE OF LI BENCH WALLS	FRECAST	ERIORATING E	× .		BENCH WALLS		y lin
CONDITION: GO DEPOSITS: MUI DEPTH OF DEPO	DEBRI	S 🙇 SLUDGE	A 52:	INVI	RT		y"out
STEPS NAME CONDITION: GO EVIDENCE OF D					0		Jan State Contract of the Cont
TROUGH CONDITION: GO EVIDENCE OF LE			X	TY	PICAL MANH	OLE 4	in <
INFLOW AND INFINE EVIDENCE OF IN EVIDENCE OF IN LOCATION/DESC	IFLOW: YES INVERT: IFILTRATION:	YES □NO X	S 1	E OF SURCHARGI			
		1.4.	SA	, too			
PIPE ENTRANCE FROM M DATA DROP L DISTAN	INE 🗆 🗀	INCOMING LIN FROM MH # O OROP LINE D DISTANCE	FT	FROM MH # DROP LINE DISTANCE	OUTGO	ING LINE	
TYPE							
DIAMETER FLOW					-		
COMMENTS:	c vidence	of qurc	narg	L		<u> </u>	

MANHOLE INSPECTION REPORT

MANHOLE COVER DIAMETER: MINCHES NO. OF HOLES IN COVER INCHES NO. OF HOLES IN COVER SEALED BOLTED EVIDENCE OF LEAKAGE: YES NO DEPTH TO EVIDENCE OF LEAKAGE: YES NO DETERIORATING EVIDENCE OF DEBRIS ON STEPS: YES NO DETERIORATING DEPTH OF DEPOSITS: MUD & DETERIORATING DEPTH OF DEPOSITS: WID & DETERIORATING DETERIORATING DEPTH OF DEPOSITS: WID & DETERIORATING DEPTH OF DEPOSITS: WID & DETERIORATING		O			DATE:
MANHOLE COVER DIAMETER: MINCHES NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE TIGHT SEALED BOLTED EVIDENCE OF LEAKAGE: YES NO DEPTH TO CONDITION: SOUND BROKEN TO INVERT STEPS FROM DEPTH TO INVERT STEPS FROM DEPTH TO SUNDENCE OF LEAKAGE: YES NO DETERIORATING EVIDENCE OF LEAKAGE: YES NO DETERIORATING DEPTH OF DEPOSITS: MUD & DEBRIS & SLUDGE DEPTH OF DEPOSITS: WINCHES CONDITION: GOOD DETERIORATING DEPTH OF DEPOSITS: WINCHES CONDITION: GOOD DETERIORATING DEPTH OF DEPOSITS: WINCHES CONDITION: GOOD DETERIORATING TROUGH INVERT TROUGH				(4)0750707(0)	
DIAMETER: INCHES NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE TIGHT SEALED BOLTED EVIDENCE OF LEAKAGE: YES NO MANHOLE FRAME CONDITION: SOUND BROKEN TO EVIDENCE OF LEAKAGE: YES NO INVERT CONDITION: PRECAST BRICK CONDITION: GOOD DETERIORATING EVIDENCE OF LEAKAGE: YES NO BENCH WALLS CONDITION: GOOD DETERIORATING DEPOSITS: MUD OF DEBRIS SLUDGE DEPTH OF DEPOSITS: INCHES EVIDENCE OF DEBRIS ON STEPS: YES NO TROUGH CONDITION: GOOD DETERIORATING EVIDENCE OF DEBRIS ON STEPS: YES NO TROUGH CONDITION: GOOD DETERIORATING EVIDENCE OF LEAKAGE: YES NO TROUGH CONDITION: GOOD DETERIORATING EVIDENCE OF LEAKAGE: YES NO INVERT TYPICAL MANHOLE NELOW AND INFILTRATION EVIDENCE OF INFLOW: YES NO EVIDENCE OF SURCHARGING: YES NO	WEATHER:	- Sunny H	9 +	_INSPECTOR(S): <u>V</u>	W/)
EVIDENCE OF LEAKAGE: YES NO	DIAMETE NO. OF H CONDITIO	R: INCHES OLES IN COVER: ON OF FIT: LOOSE SEALED	BOLTED 🗀	<u> </u>	FRAME
CONSTRUCTION: PRECAST BRICK CONDITION: GOOD DETERIORATING EVIDENCE OF LEAKAGE: YES NO DETERIORATING DEPOSITS: MUD & DEBRIS & SLUDGE DEPTH OF DEPOSITS: YES INCHES LINCHES LINC				INVERT	STEPS FROM
CONDITION: GOOD DETERIORATING DEPOSITS: MUD & DEBRIS SISUDGE DEPTH OF DEPOSITS: WINCHES DEPTH OF DEPTH	CONSTRU	ON: GOOD ☐ DE	TERIORATING 🔲	Gound	NCH WALLS MINED M/
TROUGH CONDITION: GOOD DETERIORATING TYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES NO NO INFLOW AND INFILTRATION EVIDENCE OF INFLOW: YES NO EVIDENCE OF SURCHARGING: YES NO	DEPOSITE DEPTH OF	DN: GOOD □ DE S: MUD SC DEBRI F DEPOSITS: 4	S ZET SLUDGE / IZI	TROI	JGH
CONDITION: GOOD DETERIORATING TYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES NO DEVIDENCE OF SURCHARGING: YES NO DEVIDENCE OF SURCHARGING	CONDITIO			, 🗼 🗸	
EVIDENCE OF INFLOW: YES MO D EVIDENCE OF SURCHARGING: YES A NO D	CONDITIO			ТҮРІС	CAL MANHOLE
EVIDENCE OF INFILTRATION: YES NO DE ESTIMATED FLOW RATE: TOCK GPM LOCATION/DESCRIPTION OF INFILTRATION:	EVIDENCI INCHES A EVIDENCI LOCATION	E OF INFLOW: YES BOVE INVERT: E OF INFILTRATION:	P INCHES YES □NO P INFILTRATION:		ATE: Trickle GPM
PIPE INCOMING LINES OUTGOING LINE		specific III		FROM INI "	
ENTRANCE FROM MH # FROM MH # FROM MH # TO MH # TO MH #	DATA	DROP LINE	DROP LINE	DROP LINE	
DISTANCE FT DISTANCE FT DISTANCE FT		DISTANCE FT	DISTANCE FT	DISTANCE FT	DISTANCE FT
TYPE DIAMETER					
FLOW					

MANHOLE INSPECTION REPORT MANHOLE #: STREET: Bar bro Vorth Drive WEATHER: GUNAY Hot INSPECTOR(S): Chrose MANHOLE COVER Manhole not form of form of taker DIAMETER: INCHES COVER: CONDITION OF FIT: LOOSE TIGHT SEALED BOLTED EVIDENCE OF LEAKAGE: YES NO DEPTH
NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE TIGHT SEALED BOLTED EVIDENCE OF LEAKAGE: YES NO MANHOLE FRAME Take; FRAME FRAME Take; CORBEL
CONDITION: SOUND BROKEN TO EVIDENCE OF LEAKAGE: YES NO INVERT FT. IN. STEPS
CORBEL AND WALLS CONSTRUCTION: PRECAST BRICK CONDITION: GOOD DETERIORATING EVIDENCE OF LEAKAGE: YES NO
BENCH WALLS CONDITION: GOOD DETERIORATING TROUGH DEPOSITS: MUD DEBRIS SLUDGE INCHES INVERT
STEPS CONDITION: GOOD DETERIORATING EVIDENCE OF DEBRIS ON STEPS: YES NO
TROUGH CONDITION: GOOD DETERIORATING TYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES NO D
INFLOW AND INFILTRATION EVIDENCE OF INFLOW: YES □NO □ EVIDENCE OF SURCHARGING: YES □ NO □ INCHES ABOVE INVERT: □ INCHES EVIDENCE OF INFILTRATION: YES □NO □ ESTIMATED FLOW RATE: □ GPM LOCATION/DESCRIPTION OF INFILTRATION: □
PIPE INCOMING LINES OUTGOING LINE
ENTRANCE FROM MH # FROM MH # TO MH #
DATA DROP LINE DROP LINE DROP LINE
DISTANCE FT DISTANCE FT DISTANCE FT
TYPE
DIAMETER

	MA	ANHOLE INSPE	CTION REP	PORT		
MANHOLE WEATHER	#: 1/ STREET:	Hot	Courge	CTOR(S):	DATE:	4-29
NO. OF I	ER: INCHES HOLES IN COVER: ION OF FIT: LOOSE	BOLTED D	Found	+ Bo	COVER	FRAME CORBEL
	FRAME ION: SOUND ☐ BE DE OF LEAKAGE: YE		DEPTH TO INVERT	, <i>F</i>	STEPS	
CONSTR	AND WALLS RUCTION: PRECAST ION: GOOD DE' DE OF LEAKAGE: YE	TERIORATING			NCH WALLS	1
DEPOSIT	ALLS ION: GOOD DET IS: MUD DEBRI OF DEPOSITS:	IS SLUDGE		TROI	UGH /	5
	ION: GOOD DE DE OF DEBRIS ON ST					
	ON: GOOD □ DE DE OF LEAKAGE: YE			ТҮРІС	CAL MANH	OLE
EVIDENO INCHES EVIDENO	MD INFILTRATION DE OF INFLOW: YES ABOVE INVERT: DE OF INFILTRATION: DN/DESCRIPTION OF	YES NO		RCHARGING		NO □ GPM
PIPE		INCOMING LINES			OUTGO	NG LINE
	FROM MH #	FROM MH #	_ FROM MI		TO MH#	
DATA	DROP LINE	DROP LINE	DROP LI			
TVD	DISTANCE FT	DISTANCE	FT DISTANC	E FT	DISTANCE	FT
TYPE						
FLOW						
LLOW		and the second s		ALLES AND A	200000000000000000000000000000000000000	

1 XV		
My, WY	NHOLE INSPECTION	/- // 5
MANHOLE #: /2 STREET:	Galt Con	DATE: L
127 6	MY COU	NSPECTOR(S):
Hat you	my -	
MANHOLE COVER		
DIAMETER: INCHES		COVER
NO. OF HOLES IN COVER:	TICUT M	FRAME
CONDITION OF FIT: LOOSE	BOLTED D	A
EVIDENCE OF LEAKAGE: YES		← CORBEL
MANHOLE FRAME	500	DEPTH /
CONDITION: SOUND M BF		TO Q
EVIDENCE OF LEAKAGE: YES		FT. IN.
CORBEL AND WALLS	Ψ	The state of the s
CONSTRUCTION: PRECAST		
CONDITION: GOOD _ DET		
EVIDENCE OF LEAKAGE: YES	S NO	BENCH WALLS
BENCH WALLS		DENOIT WALLS
CONDITION: GOOD DET	TERIORATING 📈	TROUGH
DEPOSITS: MUD DEBRI		
DEPTH OF DEPOSITS:	INCHES	INVERT
STEPS		
CONDITION: GOOD DET	TERIORATING 🔀	
EVIDENCE OF DEBRIS ON STI		
TROUGH		
TROUGH CONDITION: GOOD DET	TERIORATING M.	TYPICAL MANHOLE
EVIDENCE OF LEAKAGE: YE		
INFLOW AND INFILTRATION	THE E SUPENOE	ecupalitabolina yea El No. El
INCHES ABOVE INVERT:		OF SURCHARGING: YES 🗆 NO 💆
EVIDENCE OF INFILTRATION:		STIMATED FLOW RATE: / GPM
LOCATION/DESCRIPTION OF		
	DISCOUNTS LINES	CUTCOMO LINE
ENTRANCE FROM MH #	FROM MH # F	ROM MH # TO MH #
DATA DROP LINE		PROP LINE
DISTANCEFT	Charles Proposition	DISTANCE FT DISTANCE FT
TYPE		
DIAMETER		
FLOW		

TO MH 11

South

MANHOLE INSPECTION REPORT
MANHOLE #: 72 STREET: 6015 Cov /51 DATE: 9-25-12
WEATHER: INSPECTOR(S):
MANHOLE COVER DIAMETER: INCHES NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE TIGHT
SEALED BOLTED CORBEL
MANHOLE FRAME CONDITION: SOUND & BROKEN TO EVIDENCE OF LEAKAGE: YES NO NO INVERT FT. IN.
CORBEL AND WALLS CONSTRUCTION: PRECAST D BRICK CONDITION: GOOD DETERIORATING CONDITION: GOOD DETERIORATION: GOOD DE
BENCH WALLS CONDITION: GOOD DETERIORATING DEPOSITS: MUD DEBRIS SLUDGE DEPTH OF DEPOSITS: NICHES TROUGH INVERT
STEPS CONDITION: GOOD DETERIORATING EVIDENCE OF DEBRIS ON STEPS: YES DINO
TROUGH CONDITION: GOOD DETERIORATING TYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES NO
INFLOW AND INFILTRATION EVIDENCE OF INFLOW: YES NO DEVIDENCE OF SURCHARGING: YES NO DINCHES ABOVE INVERT: INCHES EVIDENCE OF INFILTRATION: YES NO DE ESTIMATED FLOW RATE: PM LOCATION/DESCRIPTION OF INFILTRATION:
PIPE INCOMING LINES OUTGOING LINE ENTRANCE FROM MH # 12 FROM MH # 15 TO MH #
TYPE
DIAMETER
FŁOW
comments: 2nd # 2 found in Field appears to match map for 12
appears to match map for 10

		MANHOLE INS	SPECTI	ON REPORT		1 0	_
MANHOLE WEATHER:	#: 13 STREE	T: Gol	F	COVIGE INSPECTOR(S		DATE: 1 - 2	<u>5</u>
NO. OF H CONDITION EVIDENCE CONDITION EVIDENCE CORBEL A CONSTR	ER: INCHES IOLES IN COVER: ON OF FIT: LOOS SEALI SE OF LEAKAGE:	BROKEN MI YES NO BRICK DETERIORATING	CORP.	DEPTH TO INVERT FT. IN.	BEN		FRAME ORBEL Agg exposu
DEPOSIT	ALLS ON: GOOD S: MUD DE OF DEPOSITS:	BRIS SLUDO			TROL	JGH	7
	ON: GOOD E OF DEBRIS ON				_	0	1
	ON: GOOD E OF LEAKAGE:				TYPIC	AL MANHOLE	
EVIDENCE INCHES A EVIDENCE	ND INFILTRATION E OF INFLOW: Y ABOVE INVERT: E OF INFILTRATION IN/DESCRIPTION	ES ONO DE INCHON: YES DO	IES (E OF SURCHAR			GPM
PIPE		INCOMING	LINES			OUTGOING L	INE
NTRANCE	FROM MH# 14	FROM MH #		FROM MH #		TO MH #	
DATA	DROP LINE DISTANCE	DROP LINE	FT	DROP LINE	FT	DISTANCE	FT
TYPE	DISTANCE	FT DISTANCE	FI	DISTANCE		DISTANCE	FI
IAMETER							
FLOW							
OMMENT	s: To	12 50vt	1				

	MA	NHOLE INSPECT	ON REPORT	DATE: 7 - 25	
MANHOLE		60019 COV	(GY	DATE: / AS	
WEATHER	1007	chily	_INSPECTOR(S):	W/S	
NO. OF HOUSE CONDITIONS MANHOLE CONDITIONS CORBEL A CONSTRUCTION CONDITIONS CONDITIONS	COVER INCHES FROME SEALED FRAME CONTROL FRAME ON: SOUND TO BE FRAME CONTROL FRAME ON: SOUND TO BE FRAME CONTROL FRAME ON: GOOD TO DET FRAME ON: GOOD TO DE FRAME	BOLTED S NO NO NO NO NO NO NO	DEPTH TO INVERT FT. IN.	COVER FRAME CORBEL A9 STEPS FI	posal laking
DEPOSIT DEPTH C	ALLS ON: GOOD DET DEBRI OF DEPOSITS: ON: GOOD DEC DE OF DEBRIS ON ST	S SLUDGE INCHES	TRO	пан	
	ON: GOOD DE DE OF LEAKAGE: YE		ТҮРІ	CAL MANHOLE	
INCHES A EVIDENCE	ND INFILTRATION DE OF INFLOW: YES ABOVE INVERT: DE OF INFILTRATION: ON/DESCRIPTION OF		CE OF SURCHARGING	~	
PIPE		INCOMING LINES		OUTGOING LINE	4
ENTRANCE DATA	FROM MH # 15	FROM MH #	FROM MH #	TO MH #	
	DISTANCE FT		DISTANCE FT	DISTANCE FT	
TYPE					
DIAMETER					
FLOW					

	MA	NHOLE INSPECTI	ON REPORT	4 24.12
MANHOLE #: WEATHER:	15 STREET:	Fairway	_INSPECTOR(S):	DATE: 9-24-12
MANHOLE FI CONDITION EVIDENCE MANHOLE FI CONDITION EVIDENCE CORBEL ANI CONSTRUCT CONDITION	INCHES LES IN COVER: NOF FIT: LOOSE SEALED OF LEAKAGE: YES RAME OF LEAKAGE: YES OF LEAKAGE: YES	BOLTED DO NO DE DO NO	DEPTH TO INVERT FT IN.	FRAME CORBEL Aggrega Aroken exposes STEPS Flaking Off
DEPOSITS: DEPTH OF STEPS	N: GOOD DET MUD DE DEBRI DEPOSITS: 2	S SLUDGE SINCHES		NCH WALLS
	N: GOOD DET OF DEBRIS ON STE			
	N: GOOD DET OF LEAKAGE: YES		TYPIC	CAL MANHOLE
EVIDENCE INCHES AB EVIDENCE	BOVE INVERT:		E OF SURCHARGING	
PIPE		INCOMING LINES		OUTGOING LINE
ENTRANCE F	ROM MH # 16 DROP LINE PT	FROM MH # 25	FROM MH # DROP LINE DISTANCE FT	ТО МН #
TYPE				
DIAMETER		7		
FLOW				

	MA	ANHOLE INSPECT	ION REPORT	0.40
MANHOLE WEATHER	#: 16 STREET:	Fairway	INSPECTOR(S):	DATE: 9-29
MANHOLE CONDITI EVIDENCE CORBEL A CONDITI CONDITI	ER: 1 INCHES HOLES IN COVER: ON OF FIT: LOOSE SEALED DE OF LEAKAGE: YE	BOLTED S NO S N	DEPTH TO INVERT FT. IN.	COVER FRAME FRAME STEPS
BENCH WAR CONDITION DEPOSITION DEPTH CONDITION	ALLS ON: GOOD M DET IS: MUD DEBRI	TERIORATING D S S SLUDGE D INCHES TERIORATING D	INVER	NCH WALLS
EVIDENO	ON: GOOD □ DE' CE OF LEAKAGE: YE	S □NO Ø		CUrrently Charging
INCHES EVIDENCE	DE OF INFLOW: YES ABOVE INVERT: DE OF INFILTRATION: DN/DESCRIPTION OF	YES □NO KÓ	ESTIMATED FLOW F	
PIPE		INCOMING LINES		OUTGOING LINE
ENTRANCE DATA	FROM MH # 17 DROP LINE DISTANCE FT	FROM MH # 19_	FROM MH # DROP LINE [] DISTANCE FT	TO MH #
TYPE				
DIAMETER				
FLOW				

MANHOLE INSPECTION	ON REPORT
MANHOLE #: 17 STREET: Vista Ver	DATE: 9-24-17 INSPECTOR(S): ONE
MANHOLE COVER DIAMETER: 27 INCHES NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE TIGHT SEALED BOLTED EVIDENCE OF LEAKAGE: YES NO	COVER FRAME - CORBEL
MANHOLE FRAME CONDITION: SOUND M BROKEN EVIDENCE OF LEAKAGE: YES NO	DEPTH TO INVERT FT. IN.
CORBEL AND WALLS CONSTRUCTION: PRECAST BRICK CONDITION: GOOD DETERIORATING EVIDENCE OF LEAKAGE: YES NO	BENCH WALLS
BENCH WALLS CONDITION: GOOD DETERIORATING DEPOSITS: MUD DEBRIS DEPUBLICATION DEPOSITS: DEPOSITS	TROUGH
STEPS CONDITION: GOOD DETERIORATING STEPS: YES NO	
TROUGH CONDITION: GOOD DETERIORATING TO EVIDENCE OF LEAKAGE: YES NO	TYPICAL MANHOLE
INFLOW AND INFILTRATION EVIDENCE OF INFLOW: YES NO DEVIDENCE INCHES ABOVE INVERT: INCHES EVIDENCE OF INFILTRATION: YES NO DE LOCATION/DESCRIPTION OF INFILTRATION:	E OF SURCHARGING: YES AD NO DESTIMATED FLOW RATE:GPM
PIPE INCOMING LINES	OUTGOING LINE
DATA DISTANCE FT DISTANCE FT	FROM MH # TO MH # DROP LINE DISTANCE FT DISTANCE FT
DIAMETER Clay	
FLOW	

MANHOLE INSPECTION REPORT
MANHOLE #: V STREET: V, 5 to Verde INSPECTOR(S): 1/2
MANHOLE COVER DIAMETER: 7 INCHES NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE TIGHT T
MANHOLE FRAME CONDITION: SOUND BROKEN DEPTH TO INVERT FT. IN.
CONSTRUCTION: PRECAST BRICK CONDITION: GOOD DETERIORATING CONDITION: GOOD DETERIORATION: GOOD GOOD GOOD GOOD GOOD GOOD GOOD GOO
CONDITION: GOOD DETERIORATING DEPOSITS: MUD DEBRIS SLUDGE DEPTH OF DEPOSITS: INCHES INCHES STEPS CONDITION: GOOD DETERIORATING DEVIDENCE OF DEBRIS ON STEPS: YES DINO DETERIORATING DEVIDENCE OF DEBRIS ON STEPS: YES DINO DETERIORATIONS DEVIDENCE OF DEBRIS DEVI
TROUGH CONDITION: GOOD DETERIORATING TYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES TO NO
EVIDENCE OF INFLOW: YES TOO DEVIDENCE OF SURCHARGING: YES NO DEVID
PIPE INCOMING LINES OUTGOING LINE ENTRANCE FROM MH # FROM MH # FROM MH # TO MH # DATA DROP LINE DROP LINE DROP LINE DISTANCE FT DISTANCE FT DISTANCE FT TYPE DIAMETER TO M
COMMENTS: Blocking lateral to 1366 vista Vede

	MA	NHOLE INSPECT	ION REPORT	a	-29-12
MANHOLE	#: 19 STREET:	Fairway	INSPECTOR		-2/2/2
WEATHER	- gohny		INSPECTOR	(3). ON	
NO. OF H	COVER R: INCHES OLES IN COVER: ON OF FIT: LOOSE	TIGHT K		COVER	FRAME
EVIDENC	SEALED E OF LEAKAGE: YES	BOLTED D	1		- CORBEL
	FRAME ON: SOUND FAL BR E OF LEAKAGE: YES		DEPTH TO INVERT FT. IN.	STEPS	exposed
CONSTR	ND WALLS UCTION: PRECAST ON: GOOD DET E OF LEAKAGE: YES	ERIORATING 🔯		BENCH WALLS	
DEPOSIT	ON: GOOD DET S: MUD DEBRIS F DEPOSITS: 3	S 📆 SLUDGE 💆		TROUGH	4
CONDITI	Volve ON: GOOD DET SE OF DEBRIS ON STE			0	
	ON: GOOD DET		4	TYPICAL MANHO	OLE
INCHES A EVIDENCE	ND INFILTRATION E OF INFLOW: YES ABOVE INVERT: E OF INFILTRATION: IN/DESCRIPTION OF I	YES NO	CE OF SURCHA		NO 🐧
B/DE 1		INCOME LANG.		Allegan	IC LINE
PIPE ENTRANCE DATA	FROM MH # 21 DROP LINE DISTANCE FT	FROM MH # 20 DROP LINE DISTANCE	FROM MH # DROP LINE DISTANCE	OUTGOIN TO MH # _	IG LINE
TYPE	DISTANCE FT	DISTANCE FI	DISTANCE	F1 DISTANCE	
DIAMETER					
FLOW					
COMMENT	s: 21	2	030 F Blocke	dirway	lateral

		NHOLE INSPE			Ol -
MANHOLE	#: 20 STREET:	1 11 May 1/2	1		DATE: 9-25
WEATHER	Hot Sul	in V	0	INSPECTOR(S):	6/12
		1			10
MANHOLE					COVED
NO. OF H	R: 17 INCHES				COVER
	ON OF FIT: LOOSE	☐ TIGHT 🌠			
		BOLTED		1	
EVIDENC	DE OF LEAKAGE: YE	s 🗆 NO 💆			- CORBEL
MANHOLE	FRAME			DEPTH /	_ \
CONDITI	ON: SOUND 🕅 BF	ROKEN		TO /	*
EVIDENC	CE OF LEAKAGE: YE	S NO 🛣		INVERT /) Vone
CORREL A	AND WALLS Brol	cen Ribus	1	FT.OIN.	SIEPS
CONSTR	RUCTION: PRECAST	BRICK 1			1 1
CONDITI	ON: GOOD DE	TERIORATING			1_1_
EVIDENC	CE OF LEAKAGE: YE	S 🗆 NO 💢		_	
DENOUW	4110			BI	NCH WALLS
BENCH W	ON: GOOD TO DE	TERIORATING (T		TRO	DUGH
DEPOSIT	S: MUD DEBRI	S FI SLUDGE	, _		July 1
	OF DEPOSITS:			INVER	RT]]
					1
STEPS	None				
	ON: GOOD DE		Ø	- ↓	4
EVIDENC	CE OF DEBRIS ON ST	EPS: TES LINO			
TROUGH					
	ON: GOOD DE			TYP	CAL MANHOLE
EVIDENC	DE OF LEAKAGE: YE	S 🗆 NO 🙇		1/2 0	vidence of
MELOW A	ND INCH TO ATION			NOE	vidence or
	ND INFILTRATION	TINO ME EVIDI	ENIC	E OE SUBCHARGIN	G: YES I NO A
	ABOVE INVERT:		LINO	E OF BOTTOTIATION	Q. 123 110 140 14
	CE OF INFILTRATION:		Ę	ESTIMATED FLOW	RATE: DGPM
	N/DESCRIPTION OF				
PIPE		INCOMING LINES	S		OUTGOING LINE
ENTRANCE	FROM MH #	FROM MH#		FROM MH #	TO MH #
DATA	DROP LINE	DROP LINE		DROP LINE	
	DISTANCE FT	DISTANCE	FT	DISTANCE F	T DISTANCE FT
TYPE			_		
DIAMETER			-		
FLOW					

	MA	ANHOLE INSPECT	ION REPORT	9-25	
MANHOLE WEATHER:		Fairway	_INSPECTOR(S):	DATE: 9-25	
NO. OF HO CONDITION	R: Z INCHES OLES IN COVER: ON OF FIT: LOOSE SEALED E OF LEAKAGE: YE	BOLTED	<u> </u>	COVER FRAME	
	FRAME DN: SOUND (C) BF E OF LEAKAGE: YE		DEPTH TO INVERT FT. IN.	STEPS age	nor expos
CONDITIO	ND WALLS JCTION: PRECAST DN: GOOD ☐ DE E OF LEAKAGE: YE	TERIORATING K		ENCH WALLS	
DEPOSITS	LLS DN: GOOD MY DE S: MUD DEBRI F DEPOSITS:		TRO	DUGH	
	ON: GOOD KO DE E OF DEBRIS ON ST				-
	ON: GOOD 🔼 DE E OF LEAKAGE: YE		ТҮР	CAL MANHOLE	
EVIDENCE INCHES A EVIDENCE	ID INFILTRATION E OF INFLOW: YES BOVE INVERT: E OF INFILTRATION: N/DESCRIPTION OF		CE OF SURCHARGIN	1	
PIPE		INCOMING LINES		OUTGOING LINE	
DATA	FROM MH # ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ	FROM MH # DROP LINE DISTANCE FT	FROM MH # DROP LINE DISTANCE FI	TO MH #	4 1
TYPE	DISTANCE FT	DISTANCE FI	DISTANCE F	DISTANCE FI	-
DIAMETER					1
FLOW					

	MA	NHOLE INSPECTI		1100	
*******	122 STREET:	To and		DATE:	
		Tairway	INSPECTOR(S):	A) /A	
WEATHER:		T		NI	
	COVER 25. R: 24 INCHES DLES IN COVER:	5" odd 5"	zv	COVER FRAME	
	N OF FIT: LOOSE	☐ TIGHT 📈	*	THE REAL PROPERTY.	Precoust
EVIDENCE	OF LEAKAGE: YES			- CORBEL	hand
	FRAME N: SOUND BR E OF LEAKAGE: YES		DEPTH TO INVERT	STEPS	Path
CONDITIO	ID WALLS ICTION: PRECAST IN: GOOD M DET E OF LEAKAGE: YES	ERIORATING			Crack
DEPOSITS	N: GOOD DE DET		TROU	11	
	ON: GOOD DET E OF DEBRIS ON STE				
	ON: GOOD □ DET EOFLEAKAGE: YES		TYPIC	CAL MANHOLE	
EVIDENCE INCHES AI EVIDENCE	DINFILTRATION OF INFLOW: YES BOVE INVERT: OF INFILTRATION: N/DESCRIPTION OF I		E OF SURCHARGING	Name of the Control o	
PIPE		INCOMING LINES		OUTGOING LINE	1
_	FROM MH #	FROM MH #	FROM MH #	TO MH #	
	DROP LINE	DROP LINE	DROP LINE		
50000A 5 550A	DISTANCE FT	DISTANCE FT	DISTANCE FT	DISTANCE FT	
TYPE		J.S. Alton	_,_,,,,,,,		
DIAMETER					
SIAWE LEN					1

V	80.0	NUOLE INCREOT	ON DEPORT	
	-	ANHOLE INSPECT	ION REPORT	DATE: 1-24-1
MANHOLE	#: 25 STREET:	Fairway		-
WEATHER	" Evenly	Winds	INSPECTOR(S):	ans
MANHOLE	COVER			
	ER: 24 INCHES	,		COVER
	HOLES IN COVER:	1		FRAM
CONDITI	ION OF FIT: LOOSE	7.0.00		
		☐ BOLTED ☐	Ť	
EVIDENC	CE OF LEAKAGE: YE	S INO K		◆ CORBE
MANHOLE	FRAME		DEPTH /	
	ION: SOUND M BF	ROKEN	то /-	•
	CE OF LEAKAGE: YES		INVERT _	1
		` <i>C</i>	FT.6 IN.	STEPS
	AND WALLS	-	_ #	
	RUCTION: PRECAST			1_1_
	ION: GOOD DET			1_1_
EVIDEN	CE OF LEAKAGE: YE	s □ NO 10xC	-	NAME OF THE PARTY
BENCH W	ALLO		BE	NCH WALLS
CONDITI	ION: GOOD DET	FRIORATING K	TDO	DUGH
DEPOSIT	TS: MUD X DEBRI	S SLUDGE		South
DEPTH C	TS: MUD A DEBRI	INCHES	INVEF	т) \ ¬
				1
STEPS				
CONDITI	ION: GOOD 🗖 DET	TERIORATING	4	
EVIDENC	CE OF DEBRIS ON ST	EPS: YES DNO 2	4	
TROUGH			4-2-34	Market Street, Street, St.
	ION: GOOD DET	TERIORATING M	TVDI	CAL MANHOLE
	CE OF LEAKAGE: YES		1,1,15	OAL MANITOLE
EVIDEIN	JE OF ELMITTIGE. TE	3 1.10)4		
NFLOW A	ND INFILTRATION			
EVIDENC	CE OF INFLOW: YES	MNO D EVIDENC	CE OF SURCHARGIN	G: YES 💆 NO E
INCHES	ABOVE INVERT:	INCHES		0
	CE OF INFILTRATION:		ESTIMATED FLOW I	RATE: GPI
	ON/DESCRIPTION OF	INFILTRATION:	<u> </u>	
LOCATIO				
LOCATIO				
PIPE		INCOMING LINES		OUTGOING LINE
	FROM MH#	INCOMING LINES	FROM MH #	OUTGOING LINE TO MH #
PIPE	FROM MH # JA		FROM MH #	
PIPE ENTRANCE DATA	The same and the s	FROM MH # 24		TO MH #
PIPE ENTRANCE DATA TYPE	DROP LINE	FROM MH # 24. DROP LINE □	DROP LINE	TO MH #
PIPE ENTRANCE DATA	DROP LINE	FROM MH # 24. DROP LINE □	DROP LINE	TO MH #

MANHOLE INSPECTION REPORT						
MANHOLE #: 26 STREET: AND INSPECTOR(S): 9-24-12 WEATHER: SYNY INSPECTOR(S): 9-24-12						
MANHOLE COVER DIAMETER: 24 INCHES NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE TIGHT TIGHT						
MANHOLE FRAME CONDITION: SOUND BROKEN TO EVIDENCE OF LEAKAGE: YES NO INVERT FT. IN.						
CORBEL AND WALLS CONSTRUCTION: PRECAST BRICK CONDITION: GOOD DETERIORATING EVIDENCE OF LEAKAGE: YES NO						
BENCH WALLS CONDITION: GOOD DETERIORATING TROUGH DEPOSITS: MUD DEBRIS SLUDGE INVERT						
STEPS CONDITION: GOOD DETERIORATING DEVIDENCE OF DEBRIS ON STEPS: YES DNO						
TROUGH CONDITION: GOOD DETERIORATING TYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES NO						
INFLOW AND INFILTRATION EVIDENCE OF INFLOW; YES □NO □ EVIDENCE OF SURCHARGING; YES □ NO □ INCHES ABOVE INVERT: □ INCHES EVIDENCE OF INFILTRATION; YES □NO □ ESTIMATED FLOW RATE: □ GPM LOCATION/DESCRIPTION OF INFILTRATION:						
PIPE INCOMING LINES OUTGOING LINE						
ENTRANCE FROM MH # FROM MH # TO MH #						
DATA DROP LINE DROP LINE DROP LINE						
DISTANCE FT DISTANCE FT DISTANCE FT						
TYPE						
DIAMETER						
FLOW						

	MA	NHOLE INSPECT	ION REPORT	<i>(1)</i>
MANHOLE	: #: 24 STREET:	Fairvious		DATE: 4-24
WEATHER	Souny	TOTTOTE	_INSPECTOR(S):	hh
MANHOLE DIAMETE NO. OF H CONDITI EVIDENCE MANHOLE CONDITI EVIDENCE CONSTR CONDITI EVIDENCE CONDITI EVIDENCE CONDITI EVIDENCE CONDITI EVIDENCE BENCH W. CONDITI	ECOVER ER: 2 INCHES HOLES IN COVER: ION OF FIT: LOOSE SEALED CE OF LEAKAGE: YES EFRAME ION: SOUND IN BE CE OF LEAKAGE: YES AND WALLS RUCTION: PRECAST ION: GOOD IO DET CE OF LEAKAGE: YES	BOLTED S NO POR S NO	DEPTH TO INVERT FT. UN.	COVER FRAME CORBEL STEPS NCH WALLS UGH
STEPS CONDITI	OF DEPOSÍTS:	TERIORATING	INVERT	
	ON: GOOD XI DET CE OF LEAKAGE: YE		ТҮРІС	CAL MANHOLE
INCHES :	ND INFILTRATION DE OF INFLOW: YES ABOVE INVERT: DE OF INFILTRATION: DN/DESCRIPTION OF	YES □NO 🔼	CE OF SURCHARGING	1
PIPE		INCOMING LINES		OUTGOING LINE
ENTRANCE	FROM MH # 24	FROM MH #	FROM MH #	TO MH #
DATA	DROP LINE .	DROP LINE	DROP LINE	
	DISTANCE FT	DISTANCE FT	DISTANCE FT	DISTANCE FT
TYPE				
DIAMETER				
FLOW				- 35 200 30 S

MANHOLE INSPECTION REPORT	4 1.
MANHOLE INSPECTION REPORT MANHOLE #: 9-2 WEATHER: Unny INSPECTOR(S): 4/5	[-]
MANHOLE COVER DIAMETER: INCHES NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE TIGHT SEALED BOLTED EVIDENCE OF LEAKAGE: YES NO	AME BEL
MANHOLE FRAME CONDITION: SOUND BROKEN TO EVIDENCE OF LEAKAGE: YES NO INVERT FT. IN.	
CORBEL AND WALLS CONSTRUCTION: PRECAST BRICK CONDITION: GOOD DETERIORATING EVIDENCE OF LEAKAGE: YES NO	_
BENCH WALLS CONDITION: GOOD DETERIORATING DEPOSITS: MUD DEBRIS SLUDGE DEPTH OF DEPOSITS: INCHES	7
STEPS CONDITION: GOOD DETERIORATING EVIDENCE OF DEBRIS ON STEPS: YES DNO	1
TROUGH CONDITION: GOOD DETERIORATING TYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES NO	
INFLOW AND INFILTRATION EVIDENCE OF INFLOW: YES □NO □ EVIDENCE OF SURCHARGING: YES □ NO INCHES ABOVE INVERT: □ INCHES EVIDENCE OF INFILTRATION: YES □NO □ ESTIMATED FLOW RATE: □ G LOCATION/DESCRIPTION OF INFILTRATION: □	
PIPE INCOMING LINES OUTGOING LINE	
ENTRANCE FROM MH# FROM MH# FROM MH# TO MH#	-
DATA DROP LINE D DROP LINE D DROP LINE	-
DISTANCE FT DISTANCE FT DISTANCE	FΤ
TYPE	
DIAMETER	
FLOW	7

	MA	NHOLE INSPECT	ON REPORT	
				DATE:9-24-12
MANHOLE # WEATHER:	SUNNY	Faltury	_INSPECTOR(S):	My B
NO. OF HO	: 24 INCHES DLES IN COVER: N OF FIT: LOOSE	BOLTED D	1	COVER FRAME CORBEL
MANHOLE F CONDITION EVIDENCE	RAME N: SOUND K BF OF LEAKAGE: YE	ROKEN	DEPTH TO INVERT FT./ IN.	steps Broken
CONDITIO	DWALLS CTION: PRECAST N: GOOD DE OF LEAKAGE: YE	ERIORATING 📙		INCH WALLS
DEPOSITS	LS N: GOOD TO DET : MUD DEBRI DEPOSITS:	S SLUDGE	TRO	DUGH
STEPS CONDITION EVIDENCE	N: GOOD DET	TERIORATING AS EPS: YES DNO Z		
TROUGH CONDITION EVIDENCE	N: GOOD X DE	TERIORATING □ S □ NO 🗷	ТҮРІ	CAL MANHOLE
EVIDENCE INCHES AS EVIDENCE	OF INFILTRATION OF INFILTRATION: OF INFILTRATION: //DESCRIPTION OF	MO EVIDENO INCHES YES NO INFILTRATION:		G: YES NO 15 RATE: Tricke GPM
PIPE		INCOMING LINES		OUTGOING LINE
DATA	ROM MH # 27 DROP LINE DISTANCE FT	FROM MH # DROP LINE DISTANCE FT	FROM MH # DROP LINE DISTANCE FT	TO MH #
TYPE				
DIAMETER				
COMMENTS	:	10 25	not found	Yet
SOMMENTO				
	G 002	Condition	Overall	er 3"66"
	Could	raise Fro	ime of Cou	er 3"66"

	MA	ANHOLE INSPE	CTION REPORT	T 0. 216
MANHOLE	#: 27 STREET:		OUT 9 C	DATE: 9-29
MANHOLE DIAMETI NO. OF I CONDIT EVIDENO MANHOLE CONDIT EVIDENO CORBEL	ECOVER ER: INCHES HOLES IN COVER: ION OF FIT: LOOSE SEALED CE OF LEAKAGE: YE	BOLTED D S NO D ROKEN D S NO D	in Ba inspected as Directed DEPTH TO	COVER FRAME CORBEL STEPS
CONDIT	ION: GOOD DE	TERIORATING		BENCH WALLS
DEPOSIT	ALLS ION: GOOD DET IS: MUD DEBRI DEPOSITS:	S SLUDGE		TROUGH
	ION: GOOD DE CE OF DEBRIS ON ST			
	ON: GOOD DE		4	TYPICAL MANHOLE
EVIDENO INCHES EVIDENO	ND INFILTRATION DE OF INFLOW: YES ABOVE INVERT: DE OF INFILTRATION: DN/DESCRIPTION OF	YES NO		ARGING: YES 🗆 NO 🗖
PIPE		INCOMING LINES		OUTGOING LINE
ENTRANCE	FROM MH#	FROM MH #	FROM MH#	TO MH #
DATA	DROP LINE	DROP LINE	DROP LINE	
JAIN.	DISTANCE FT	24,000,000	FT DISTANCE	FT DISTANCE FT
TYPE				
DIAMETER				
FLOW				

MANHOLE INSPECTION REPORT
MANHOLE #: 28 STREET: Barbra Warth Drive DATE: 9-24-12 WEATHER: Hot Sunny INSPECTOR(S): 0/5
MANHOLE COVER DIAMETER: 14 INCHES NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE 18 TIGHT Group 24th cover SEALED BOLTED FRAME SEALED BOLTED CORBEL
MANHOLE FRAME CONDITION: SOUND BROKEN TO EVIDENCE OF LEAKAGE: YES NO INVERT FT. IN.
CORBEL AND WALLS CONSTRUCTION: PRECAST & BRICK CONDITION: GOOD & DETERIORATING EVIDENCE OF LEAKAGE: YES NO
BENCH WALLS CONDITION: GOOD EI DETERIORATING DEPOSITS: MUD DEBRIS SLUDGE DEPTH OF DEPOSITS: INCHES
STEPS CONDITION: GOOD DETERIORATING DEVIDENCE OF DEBRIS ON STEPS: YES DOOD
TROUGH CONDITION: GOOD DETERIORATING STYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES NO 100
INFLOW AND INFILTRATION EVIDENCE OF INFLOW: YES NO □ EVIDENCE OF SURCHARGING: YES NO □ INCHES ABOVE INVERT: INCHES EVIDENCE OF INFILTRATION: YES □NO NO ESTIMATED FLOW RATE: I GPM LOCATION/DESCRIPTION OF INFILTRATION:
PIPE INCOMING LINES OUTGOING LINE
ENTRANCE FROM MH # FROM MH # TO MH #
DATA DROP LINE DROP LINE DROP LINE FT DISTANCE FT DISTANCE FT
TYPE
DIAMETER
FLOW
COMMENTS: TO MH # 5 GOOD Flow rate
Te.

	MA	NHOLE INSPE	CTI	ON REPORT		9	75
	#: 29 STREET:	Colf (INSPECTOR(S):	DATE:	1~	
NO. OF I	COVER ER: INCHES HOLES IN COVER: _ ON OF FIT: LOOSE	BOLTED D	H	of Foun	d cove		FRAME
	FRAME ON: SOUND BF CE OF LEAKAGE: YES			DEPTH TO INVERT FT. IN.	_ >	EPS	
CONSTR	IND WALLS IUCTION: PRECAST ON: GOOD [] DET CE OF LEAKAGE: YES	TERIORATING			ENCH WA	LS	
DEPOSI1	ALLS ON: GOOD DET TS: MUD DEBRI DEDEPOSITS:	S 🔲 SLUDGE		TR	ondH		
	ON: GOOD DET DE OF DEBRIS ON ST				1)	1
	ON: GOOD [] DET DE OF LEAKAGE: YE			TYP	PICAL MA	ANHOLE	,
INFLOW AND INFILTRATION EVIDENCE OF INFLOW: YES DINO DEVIDENCE OF SURCHARGING: YES DINO DESCRIPTION OF INFILTRATION:							
PIPE		INCOMING LINE			OUT	TGOING L	INE
1	FROM MH #	FROM MH #		FROM MH#	TO MI		
DATA	DROP LINE	DROP LINE	_	DROP LINE	_		
	DISTANCE FT		FT		T DIST	ANÇE	FT
TYPE							
DIAMETER							
FLOW							[

	MA	ANHOLE INSPECT	ION REPORT	0.20	
MANHOLE WEATHER	STREET:		_INSPECTOR(S):	DATE: 1-29	4
MANHOLE CONDITI EVIDENCE CORBEL A CONDITI CONDITI	ER: INCHES HOLES IN COVER: ION OF FIT: LOOSE SEALED DE OF LEAKAGE: YE	BOLTED S NO S NO S NO S S NO S S S S S S S S S	Found in B fence Di DEPTH TO INVERT FT. IN.	STEPS	prilate
DEPOSIT	ALLS ON: GOOD DEBRI OF DEPOSITS:	S SLUDGE	TRO	NCH WALLS	
	ON: GOOD DE DE OF DEBRIS ON ST				
	ON: GOOD DE DE OF LEAKAGE: YE		ТҮРК	CAL MANHOLE	
EVIDENC INCHES EVIDENC	MD INFILTRATION DE OF INFLOW: YES ABOVE INVERT: DE OF INFILTRATION: ON/DESCRIPTION OF	YES □NO □	CE OF SURCHARGING		
PIPE		INCOMING LINES		OUTGOING LINE	1
ENTRANCE	FROM MH #	FROM MH #	FROM MH #	TO MH #	1
DATA	DROP LINE	DROP LINE	DROP LINE		
	DISTANCE FT	DISTANCE FT	DISTANCE FT	DISTANCE FT	
TYPE					
DIAMETER					
FLOW					

	MA	ANHOLE INSPE	CT	ION REPORT			
	31	0100				DATE: 9	29
MANHOLE	#: / STREET:	Golf Co	11	50		A A	
WEATHER	- gunn	4		_INSPECTOR(S): 🛭	y si	
MANHOLE		/					1
	ER: INCHES			MHV	al	COVER	1
	HOLES IN COVER:			14/10	. 0 1	J	FRAME
	ION OF FIT: LOOSE	☐ TIGHT ☐				+	3
		BOLTED C]	†		4	
EVIDEN	CE OF LEAKAGE: YE	S NO D					CORBEL
				1	/	1	
MANHOLE				DEPTH	1	1	
	ION: SOUND BE			TO	/	*	\
EVIDENC	CE OF LEAKAGE: YE	S D NO D		INVERT FT. IN.	-	STEPS	1
COPREI A	AND WALLS			P1. INC.	1	SIEPS	
	RUCTION: PRECAST	□ BBICK □			-	1 1	
	ION: GOOD DE		Į		_	1	
	CE OF LEAKAGE: YE						1
					BEI	NCH WALLS	
BENCH W					-		
	ON: GOOD DE				TRO	UGH /	
	rs: Mud 🗖 debri					11	
DEPTH	OF DEPOSITS:	INCHES		"	IVER		
STEPS							*
	ON: GOOD DE	TERIORATING [1				
	CE OF DEBRIS ON ST			* [7
TROUGH							
	ON: GOOD DE]	Т	YPIC	SAL MANHOL	.E
EVIDEN	CE OF LEAKAGE: YE	S DNO D					
INELOW A	ND INFILTRATION						
	CE OF INFLOW: YES	TINO TI EVID	ENC	CE OF SURCHAR	GING	YES TI	ио П
	ABOVE INVERT:			22 01 0011011/01	WII 1C	a. , .	
	E OF INFILTRATION:			ESTIMATED FLO	WA	ATE:	GPM
	ON/DESCRIPTION OF						
				F-1			
			_				
PIPE	EDOM MU *	INCOMING LINE	5	EDOM MU 4	-	TO MH #	LINE
ENTRANCE DATA	DROP LINE	FROM MH # DROP LINE []		FROM MH #	_	IOMN#	
DAIA	DISTANCE FT	200000000	FT	DISTANCE	FT	DISTANCE	FT
TYPE	pio inito E	DIDIRIOL	-	DIOTRIGE		DIOTATOL	,,
DIAMETER							
FLOW							

COMMENTS:

MANHOLE INSPECTION REPORT	/-
MANHOLE #: 32 STREET: Behind Hotel hear Golf course WEATHER: Guny Hot INSPECTOR(S): DATE: 9-2	
MANHOLE COVER 14 DIAMETER: INCHES INCOVER: NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE TIGHT SEALED BOLTED EVIDENCE OF LEAKAGE: YES NO O	FRAME
MANHOLE FRAME CONDITION: SOUND BROKEN TO EVIDENCE OF LEAKAGE: YES NO TO INVERT FT. IN.	- agg
CORBEL AND WALLS CONSTRUCTION: PRECAST BRICK CONDITION: GOOD DETERIORATING A EVIDENCE OF LEAKAGE: YES NO BENCH WALLS	
BENCH WALLS CONDITION: GOOD DETERIORATING DEPOSITS: MUD DEBRIS SLUDGE DEPTH OF DEPOSITS: NINCHES	
STEPS (ONT) CONDITION: GOOD DETERIORATING EVIDENCE OF DEBRIS ON STEPS: YES NO	1
TROUGH CONDITION: GOOD Ø DETERIORATING □ TYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES □ NO Ø	
INFLOW AND INFILTRATION EVIDENCE OF INFLOW: YES MO □ EVIDENCE OF SURCHARGING: YES □ NO INCHES ABOVE INVERT: □ INCHES EVIDENCE OF INFILTRATION: YES □ NO MO ESTIMATED FLOW RATE: LOCATION/DESCRIPTION OF INFILTRATION: □	_GPM
PIPE INCOMING LINES OUTGOING L	INE
ENTRANCE FROM MH # FROM MH # FROM MH # TO MH #	-1146
DATA DROP LINE DROP LINE DROP LINE	
DISTANCE FT DISTANCE FT DISTANCE	FT
TYPE	
DIAMETER	
FLOW	
comments: I'm lost I Prop connect into voing into	tion MH

Photo takeh

MANHOLE INSPECTION REPORT $Q_{-2} H_{-1}$	_
MANHOLE INSPECTION REPORT MANHOLE #: \(\frac{7}{9} \) STREET: \(\frac{1}{3} \) STREET: \(\fr	2
MANHOLE COVER DIAMETER: INCHES NO. OF HOLES IN COVER: CONDITION OF FIT: LOOSE TIGHT FRAME SEALED BOLTED EVIDENCE OF LEAKAGE: YES NO	
MANHOLE FRAME CONDITION: SOUND BROKEN TO EVIDENCE OF LEAKAGE: YES NO INVERT FT. IN.	
CORBEL AND WALLS CONSTRUCTION: PRECAST BRICK CONDITION: GOOD DETERIORATING EVIDENCE OF LEAKAGE: YES NO	
BENCH WALLS CONDITION: GOOD DETERIORATING TROUGH DEPOSITS: MUD DEBRIS SLUDGE INCHES INVERT	
STEPS CONDITION: GOOD □ DETERIORATING □ EVIDENCE OF DEBRIS ON STEPS: YES □NO □	
TROUGH CONDITION: GOOD DETERIORATING TYPICAL MANHOLE EVIDENCE OF LEAKAGE: YES NO D	
INFLOW AND INFILTRATION EVIDENCE OF INFLOW: YES NO DEVIDENCE OF SURCHARGING: YES NO DEVIDENCE OF SURCHARGING: YES NO DEVIDENCE OF INFILTRATION: YES NO DESTIMATED FLOW RATE: GPM LOCATION/DESCRIPTION OF INFILTRATION:	
PIPE INCOMING LINES OUTGOING LINE	
ENTRANCE FROM MH # FROM MH # TO MH #	
DATA DROP LINE DROP LINE DROP LINE	
DISTANCE FT DISTANCE FT DISTANCE FT	
TYPE	
DIAMETER	
FLOW	

COMMENTS:



Appendix F

Pipeline and Force Main Inspection Logs



X

for Bureau Veritas NA

Work Order	Contract	VI	deo	Se	etup 25	
Facility	Operator NJP	Van	Ref 10	Surveyed	On 09/25/	2012
Street Name Barbara Worth	Rd	City Holtv	ille			
Location type Surface Survey purpose Random survey	of pipes and things	Weathe	nr Dry			
Pipe Use Sanitary	Sched ler	ngth Ft	From01		Depth	Ft
Shape Circular	Size 10 by	ins	To PUMP ST	TATION	Depth	Ft
Material Polyvinly chloride	Joint Spacing	Ft	Direction Dov	vn		
Lining	Year laid		Pre-clean N	Last Clea	ned	
General note Line leads across l	Even Hewes Hwy		Structural	Service	Constr	uctional
Location note			Miscellaneous	Hydraulic		

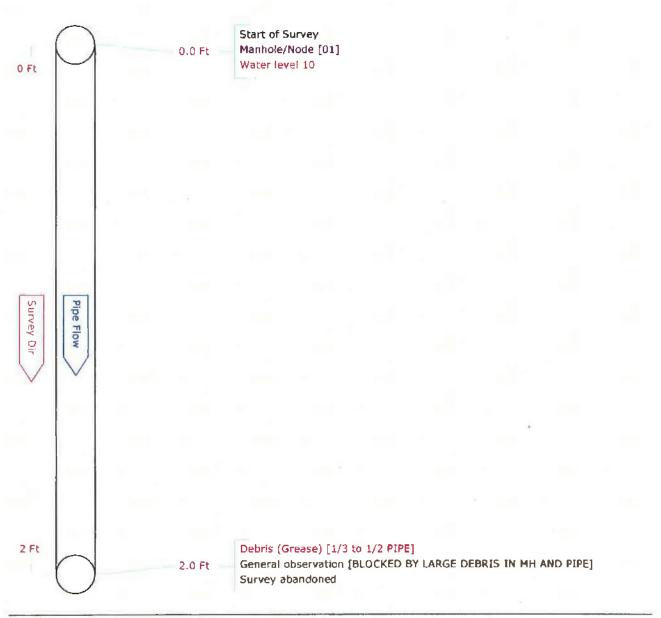
Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		MH	Manhole/Node					01
	0.0		WL	Water level				10	
	2.0		DEG	Debris (Grease)	L				1/3 to 1/2 PIPE
	2.0		GO	General observation					BLOCKED BY LARGE DEBRIS IN MH.
	2.0		SA	Survey abandoned					

Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 75



Pipe Graphic Report of PLR 01	X	for Bureau Ve	eritas NA
Work Order C Facility	ontract Operator NJP	Video Van Ref 10	Setup 25 Surveyed On 09/25/2012
Street Name Berbara Worth Rd Location type Surface	City	Holtville	A. Shi
Survey purpose Random survey of p Pipe Use Sanitary	Schedule length	Ft From 01	r Dry Depth Ft
Shape Circular Material Polyvinly chloride Lining	Size 10 by Joint specing Year laid	ins To PUI Ft Direction	MP STATION Depth Ft Downstream N Last cleaned
General note Line leads across Evan Location note	Hewes Hwy	Structural Miscellaneo	Service Constructional us Hydraulic





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for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Downstream	Setup 25		
Street Name Barbara Worth Rd City Name Holtville		Weather Dry				
Location		From Manhole 01	To Manhole PUMP	STATION		

Date: 09/25/2012
Distance: 2.0 Ft
Obs: Debris (Grease)

Comments: 1/3 to 1/2 PIPE



Date: 09/25/2012 Distance: 2.0 Ft

Obs: General observation

Comments:

BLOCKED BY LARGE DEBRIS IN MH AND PIPE



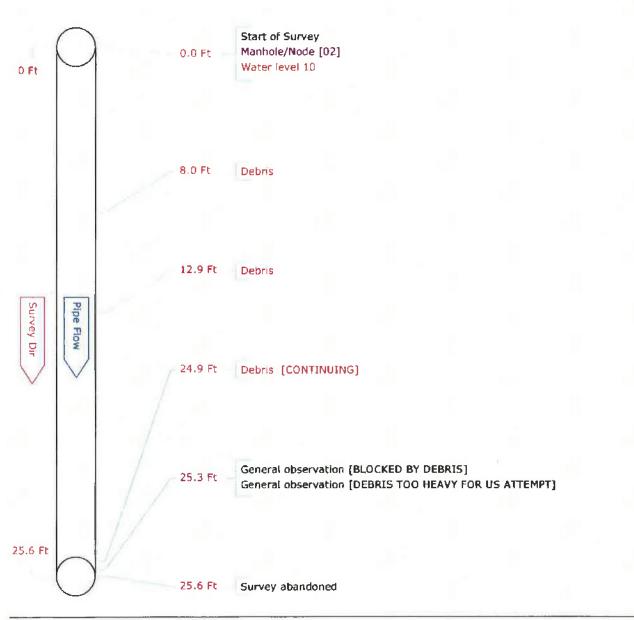
Contract		Vide	90	Se	tup 23	
Operator NJP	v	an R	ef 10	Surveyed	On 09/25/2	2012
	City H	altville	e			
pes and things	Wee	ther	Dry			
Sched le	ngth	Ft	From 02		Depth	FI
Size 8 by	lns.		To 01		Depth	F
Joint Specing	Ft		Direction Dow	π		
Year laid			Pre-clean N	Last Clea	ned	
			Structural	Service	Constru	ction
			Miscellaneous	Hydraulic		
	pes and things Sched let Sixe 8 by Joint Spacing	pes and things Wes Sched length Size 8 by Ins Joint Specing Ft	pes and things Sched length Ft Size 8 by Ins Joint Specing Ft	Person NJP Van Ref 10 City Holtville Pes and things Weather Dry Sched length Ft From 02 Size 8 by Ins To 01 Joint Specing Ft Direction Down Year laid Pre-clean N Structural	Person NJP Van Ref 10 Surveyed City Holtville Pes and things Weather Dry Sched length Size 8 by Ins Joint Specing Year laid Pre-clean N Last Clean Structural Service	Person NJP Van Ref 10 Surveyed On 09/25/2 City Holtville Pes and things Weather Dry Sched length Ft From 02 Depth Size 8 by Ins To 01 Depth Joint Specing Ft Direction Down Year laid Pre-clean N Last Cleaned Structural Service Constru

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
_	0.0		ST	Start of Survey					
	0.0		MH	Manhole/Node					02
Ĭ	0.0		WL	Water level				10	
_	8.0		DE	Debris	L				
	12.9		DE	Debris	L				_
	24.9		DE	Debris	L		L.		CONTINUING
	25.3		GO	General observation			<u> </u>		BLOCKED BY DEBRIS
	25.3		GO	General observation					DEBRIS TOO HEAVY FOR US ATTEM
	25.6		SA	Survey abandoned		<u> </u>	<u> </u>		

25.8 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 450	Mean Defect 112.5	Peak 150	Mean Pipe 17.6







Х

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Downstream	Setup 23
Street Name Barbara Worth Rd	City Name Holtville	We	ather Dry	5.865
Location		From Manhole 02	To Manhole 01	

Date: 09/25/2012 Distance: 8.0 Ft Obs: Debris

Comments:

Date: 09/25/2012 Distance: 12.9 Ft Obs: Debris

Comments:



Date: 09/25/2012 Distance: 24.9 Ft Obs: Debris

Comments: CONTINUING



X

for Bureau Veritas NA

Work Order	Contract		VI	deo	Set	up 24	
Facility	Operator NJF	•	Van	Ref 10	Surveyed (On 09/25/2	2012
Street Name Barbara Worth	n Rd	-	City Holtv	ille			
Location type							
Surface							
Survey purpose Random surve	y of pipes and things	3	Weathe	r Dry			
Pipe Use Sanitary		Sched length	Ft	From 03		epth	Ft
Shape Circular		Size 8 by	ins	To 02)epth	Ft
Material Polyvinly chloride	J	loint Spacing	Ft	Direction Dov	'n		
Lining		Year laid		Pre-clean N	Last Clean	led	
General note CREATED SURV	EY. HEAVY GREAS	SE IN MH		Structural	Service	Constn	uctiona
Location note				Miscellaneous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0,0		ST	Start of Survey					
	0.0		MH	Manhole/Node					03
	0.0		WL	Water level				10	
	0.0		GO	General observation]			HEAVY GREASE IN MH
	0.0		GO	General observation			i		PUMP STATION PUMPED DOWN FOR
	0.0		GO	General observation		Ī	$\overline{}$		LINE 1/3 TO 1/2 FULL OF DEBRI
	0.0		GO	General observation					DID NOT ATTEMPT VIDEO DUE TO
	0.0		SA	Survey abandoned	į				

0.0 Ft Total Length Surveyed

Scores

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0



X for Bureau Veritas NA

	• •				
Work Order	Contract	Vic	deo	Set	tup 22
Facility	Operator NJP	Van I	Ref 10	Surveyed	On 09/25/2012
Street Name Barbara Worth	Rd	City Holtvi	ile		
Location type					
Surface					
Survey purpose Random survey	of pipes and things	Weathe	r Dry		
Pipe Use Senitary	Sched (en	gth Ft	From04	E	Depth Ft
Shape Circular	Size 8 by	ìns	To 03	1	Depth Ft
Material Polyvinly chloride	Joint Spacing	Ft	Direction Dow	'n	
Lining	Year laid		Pre-clean N	Last Clear	ned
General note			Structural	Service	Constructiona
Location note			Miscellaneous	Hydraulic	

Video	Count	CD	Code		Sev	Fr	То	Value	Remarks
	0.0		MH	Manhole/Node					04
	0.0		WL	Water level				5	
	0.0		DE	Debris	L				LARGE DEBRIS IN MH
	1.0		GO	General observation					DS MH SURCHARGED, FULL OF DEB
	1.2		GO	General observation					BLOCKED BY DEBRIS
	1.2		SA	Survey abandoned					

1.2 Ft **Total Length Surveyed**

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 125



Pipe Graphic Report of PLR 04	X	for	Bureau Verit	as NA	
Work Order Cont Facility O	ract perator NJP	Video Van	Ref 10	Setup Surveyed On	22 09/25/2012
Street Name Barbara Worth Rd Location type Surface Survey purpose Rendom survey of pipes	City and things	Holtvi		Dry	
Pipe Use Sanitary Shape Circular Material Polyvinly chloride Lining	Schedule length Size 8 by Joint spacing Year laid	F1 Ins Ft	From 04 To 03 Direction Do Pre-clean N	Depti Depti wnstream Last cleaned	
General πote Location note			Structural Miscellaneous	Service C	onstructional

Manhole/Node [04] Water level 5 0.0 Ft Debris [LARGE DEBRIS IN MH] 0 Ft Survey Dir 1.0 Ft General observation (DS MH SURCHARGED, FULL OF DEBRIS, NO ACCESS FOR US ATTEMPT 1.2 Ft General observation [BLOCKED BY DEBRIS] 1.2 Ft Survey abandoned



Х

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Downstream	Setup 22
Street Name Barbara Worth Rd	City Name Holtville	We	ather Dry	!
Location		From Manhole ()4	To Manhole 03	

Date: 09/25/2012 Distance: 0.0 Ft Obs: Debris

Comments:

LARGE DEBRIS IN MH



Α

for Bureau Veritas NA

Work	Order			Contract				1	Vlde	90	Setup 34		
F	acility			Operator I	NJP		Van Ref 10				Surveyed On 09/27/2012		
Str	reet Name	Barb	ara Wo	rth Rd			City	Hol	tville	3			
Loca	ation type	3											
	Surface	3											
Survey	y purpose	Rand	lom sun	vey of pipes and thi	ngs		V	/eat	her	Dry			
Pipe	Use Sani	itary			Sche	d length	1	F	t	From 05		Depth	Ft
Si	hape Circ	ular			Size 8	by	ins	1		To 06		Depth	Ft
Mate	erial Vitil	fied cla	ıy		Joint Spe	cing	Ft			Direction Dow	'n		
Li	ining				Year lai	d				Pre-clean N	Last Cle	aned	
Gener	ral note C	reated	survey	. Could not attempt	line.					Structural	Service	Constr	uctional
	on note		·							Miscellaneous	Hydraulic		
Video	Count	CD	Code				Sev	Fr	To	Value Remark	5	<u> </u>	
	0.0		ST	Start of Survey			Τ						•
	1		140.1	Allowbole (blocks				_		Los			

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		МН	Manhole/Node			ĺ.,		05
	0.0		WL	Water level				0	
	0.0		GO	General observation	1				MAPS INCORRECT, MH 05 LEADS D
	0.0		GO	General observation					BOTH US AND DS MH'S SURCHARGE
	0.0		GO	General observation					LINES POSSIBLY SURCHARGED DUE

0.0 Ft Total Length Surveyed

Scores

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Α

for Bureau Veritas NA

Work Order	Contract			Vid	leo	Set	up 33	
Facility	Operator NJP			Van F	Ref 10	Surveyed (On 09/27/	2012
Street Name Barbara Worth	Rd		City	Holtvil	le			
Location type								
Surface								
Survey purpose Rendom survey	of pipes and things		W	athe	r Dry			
Pipe Use Senitary		Sched lengt	h	Ft	From 06)epth	Ft
Shape Circular	Size	8 by	ins		To 04)epth	Ft
Material Vitrified clay	Joint	Spacing	Ft		Direction Dow	'n		
Lining	Yes	<u>r l</u> aid			Pre-clean N	Last Clean	ed	
General note Created survey. Co	ould not attempt line.				Structural	Service	Constr	uctional
Location note	•				Miscellaneous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	То	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		МН	Manhole/Node					06
	0,0		WL	Water level				0	
	0.0		GO	General observation	.	Ĺ.			BOTH US AND DS MH'S SURCHARGE
	0.0		GO	General observation					NO ACCESS OR VISIBILITY
	0.0		GO	General observation	Ĭ				LINES POSSIBLY SURCHARGED DUE
	0.0		GO	General observation	ĺ				MAPS INCORRECT, MH 08 LEADS D

0.0 Ft Total Length Surveyed

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Α

for Bureau Veritas NA

Work Order	Contract		Vid	90	Setu	p 32
Facility	Operator NJP	,	Van R	ef 10	Surveyed O	n 09/27/2012
Street Name Barbara \ Location type Surface Survey purpose Random s		City I	-loltvill ather			
Pipe Use Sanitary		l length	Ft	From07	De	pth Ft
Shape Circular	Size 8	by ins		To 06		pth Ft
Material Vitrified clay	Joint Spac	ing Ft		Direction Dow	n	•
Lining	Year laid		ļ	Pre-clean N	Last Cleans	d
General nota Created surv	ey. Could not attempt line.			Structural	Service	Constructions
Location note				Miscellaneous	Hydraulic	

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0,0		ST	Start of Survey					
	0.0		МН	Manhole/Node					07
	0.0		WL	Water level				0	
	0.0		GO	General observation					US MH NOT FOUND
	0.0		GO	General observation					DS MH SURCHARGED, NO ACCESS O
,	0.0		ĢO	General observation					COULD NOT ATTEMPT LINE
	0.0		GO	General observation					LINE POSSIBLY SURCHARGED DUE

0.0 Ft Total Length Surveyed

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



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for Bureau Veritas NA

•							
Work Order	Contract		Vid	80	Se	tup 31	
Facility	Operator NJP	٧.	/an R	tef 10	Surveyed	On 09/27/2	2012
Street Name Barbara W	orth Rd	City H	loltvill	е		_	
Location type							
Surfaca							
Survey purpose Random su	rivey of pipes and things	Wes	ather	Dry			
Pipe Use Sanitary	Sched le	ngth	Ft	From08		Depth	Ft
Shape Circular	Size 8 by	y ins		To 07	I	Depth	Ft
Material Vitrified clay	Joint Spacing	j Ft		Direction Dow	'n		
Lining	Year laid			Pre-clean N	Last Clear	ned	
General note Created surve	by. Could not attempt line.			Structural	Service	Constru	uctional
Location note	•			Miscellaneous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	То	Value	Remarks
	0.0		ST	Start of Survey			<u> </u>		
	0.0		MH	Manhole/Node					08
	0.0		WL	Water level				0	
	0.0		GO	General observation					US MH BEND TOO TIGHT IN TRAUG
	0.0		GO	General observation					DS MH NOT FOUND
	0.0		GO	General observation	1				COULD NOT ATTEMPT LINE

0.0 Ft Total Length Surveyed

Scores

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



PipeLogix Inc. Phone: 866-299-3150 Fax: 760-406-6023

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Work Order	Contract		Vide	90	Setu	ıp 28	
Facility	Operator NJP		Van R	ef 10	Surveyed C	n 09/26/20	12
Street Name Barbara Worth Ro		Clty	Holtville	9			
Location type							
Surface							
Survey purpose Random survey of	pipes and things	We	ather	Dry		and the second	
Pipe Use Sanltary	Sched le	ngth	Ft	From09	D	epth	Ft
Shape Circular	Size 8 by	ins		To 08	De	epth	Ft
Material Vitrified clay	Joint Spacing	Ft	- 1	Direction Dow	n		
Lining	Year laid			Pre-clean N	Last Cleane	bed	
General note				Structural	Service	Construc	tiona
Location note				Miscellaneous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		МН	Manhole/Node					09
	0.0	-	WL	Water level				3	
	6.0		CB	Break in Connection		09			
	8.0		DE	Debris	M				
	41.8		CN	Service Connection		09			
	51.5		DE	Debris	L				CONTINUING
	84.8		CN	Service Connection		10			
	128.1		CN	Service Connection		09			
	146.3		MH	Manhole/Node					08
	146.3	-	FH	Finish of Surveys					

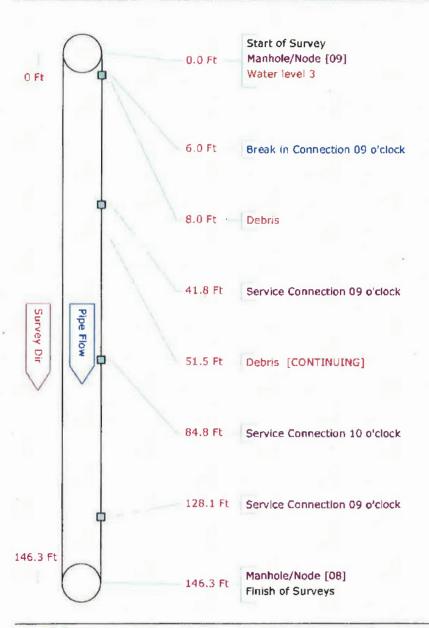
146.3 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 225	Mean Defect 75	Peak 150	Mean Pipe 1.5



Miscellaneous

Hydraulic





Location note

PipeLogix Inc. Phone: 866-299-3150

Fax: 760-406-6023

X for Bureau Veritas NA

Work Order	Video	Surveyed On 09/26/2012	Direction Downstream	Setup 28		
Street Name Barbara Worth Rd	City Name Holtville	Weather Dry				
Location		From Manhole 09	To Manhole 08			

Date: 09/26/2012 Distance: 6.0 Ft

Obs: Break in Connection

Comments:



Date: 09/26/2012 Distance: 8.0 Ft Obs: Debris

Comments:



Date: 09/26/2012 Distance: 41.8 Ft

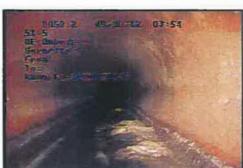
Obs: Service Connection

Comments:



Date: 09/26/2012 Distance: 51.5 Ft Obs: Debris

Comments:



Date: 09/26/2012 Distance: 84.8 Ft

Obs: Service Connection

Comments:



Date: 09/26/2012 Distance: 128.1 Ft

Obs: Service Connection



for Bureau Veritas NA

and the post of the term						
Work Order	Contract	V	ideo	Set	up 27	
Facility	Operator NJP	Van	Ref 10	Surveyed On 09/26/201		
Street Name Barbara Worth R Location type Surface		City Holt				
Survey purpose Random survey of	f pipes and things	Weath	er Dry			
Pipe Use Sanitary	Sched	length Ft	From 09		epth	Ft
Shape Circular	Size 8	by ins	To 10	C	Pepth	Ft
Material Vitrified clay	Joint Spacis	ng Ft	Direction Up			
Lining	Year laid		Pre-clean N	Last Clean	ed	
General note			Structural	Service	Construc	tiona
Location note			Miscellaneous	Hydraulic		

Video	Count C	D Code		Sev	Fr	To	Value	Remarks
	0.0	ST	Start of Survey					
	0.0	MH	Manhole/Node					09
	0.0	WL	Water level				3	
	5.0	DE	Debris	S				
	11.5	CN	Service Connection		10			
	20.1	CN	Service Connection		02			
	55.6	DEG	Debris (Grease)	8				
	69.5	CRA	Roots around Lateral	S	03			
	69.7	СВ	Break in Connection		03			
	73.8	CN	Service Connection		10			
	84.4	СВ	Break in Connection		02			
- Tanker	87.0	CN	Service Connection		02			
	87.6	DEG	Debris (Grease)	M				CONTINUING
	115.6	DEG	Debris (Grease)	M				CONTINUING
	139.2	CN	Service Connection		10			
	152.4	CN	Service Connection		02			N == T
	166.5	DEG	Debris (Grease)	L				CONTINUING
	196.6	CP	Plugged Connection		03			
	201.4	GO	General observation					LINE CONTINUES US
311111111111111111111111111111111111111	201.4	MH	Manhole/Node					10
	201.4	FH	Finish of Surveys					

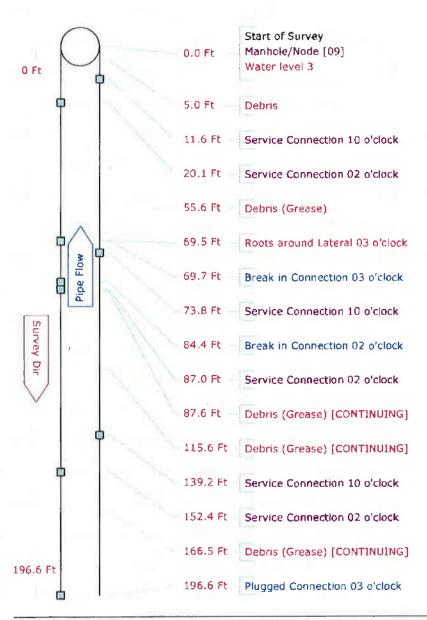
201.4 Ft Total Length Surveyed

Scores

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 420	Mean Defect 60	Peak 150	Mean Pipe 2.1

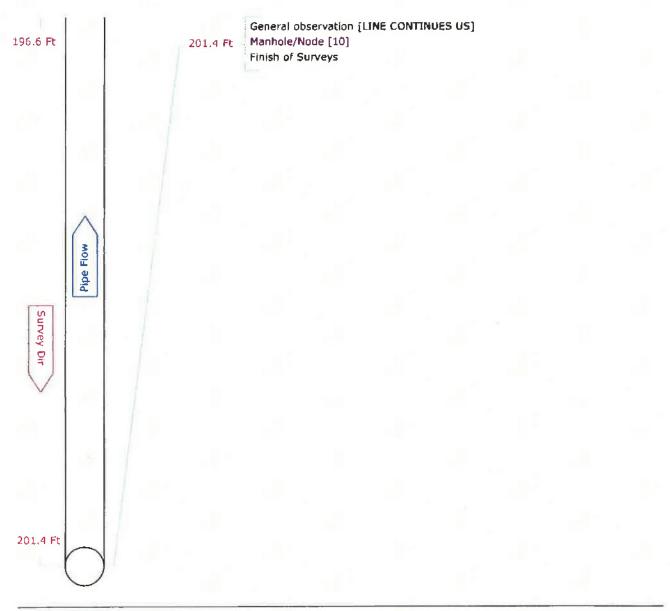


Pipe Gra	phic Repor	t of PLR 10		X	fo	r Bureau Verita	as NA
Work Orde Facility)r	C	Contract Operator	NJP	Vide Va	n Ref 10	Setup 27 Surveyed On 09/26/2012
Street Nam Location (Surface Survey po	уре	ara Worth Rd	ipes and things	City	Holt		Dry
Pipe Use	Sanitary		Sche	dule length	Ft	From 09	Depth Ft
Shape Material Lining	Circular Vitrified clay		Size Joint Year	spacing	ins Ft	To 10 Direction Ups Pre-clean N	Depth Ft stream Lest cleaned
General no Location r						Structural Miscellaneous	Service Constructional Hydraulic





Pipe Gra	phic Report of PLR	10	(fo	r Bureau Verita	as NA	
Work Orde Facility	or .	Contract Operator NJ	P	Vide Va	o n Ref 10	Setup Surveyed On	27 09/26/2012
Street Nam Location i Surface Survey pu	уре	d of pipes and things	City	Holt		Dry	
Pipe Use Shape Material Lining	Sanitary Circular Vitrified clay		pacing	Ft ins Ft	From 09 To 10	Dept Dept stream Last cleaned	
General no Location r					Structural Miscellaneous	Service (Constructional





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for Bureau Veritas NA

Work Order	Video	Surveyed On 09/26/2012	Direction Upstream	Setup 27
Street Name Barbara Worth Rd	City Name Holtville	We	eather Dry	
Location		From Manhole 09	To Manhole 10	

Date: 09/26/2012 Distance: 5.0 Ft Obs: Debris

Comments:

0005.0' NS-25/12 07:28
5.0
0E(Debria
Severity &
Fram:
To:
Reharks:

Date: 09/26/2012 Distance: 11.6 Ft

Obs: Service Connection

Comments:



Date: 09/26/2012 Distance: 20.1 Ft

Obs: Service Connection

Comments:

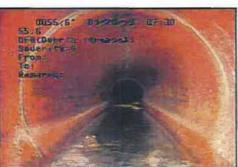


Date: 09/26/2012

Distance: 55.6 Ft

Obs: Debris (Grease)

Comments:



Date: 09/26/2012 Distance: 69.5 Ft Obs: Roots aroun

Roots around Lateral

Comments:



Date: 09/26/2012 Distance: 69.7 Ft

Obs: Break in Connection



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for Bureau Veritas NA

Work Order	Video	Surveyed On 09/26/2012	Direction Upstream	Setup 27		
Street Name Barbara Worth Rd	City Name Holtville	We	Weather Dry			
Location		From Manhole 09	To Manhole 10			

Date: 09/26/2012 Distance: 73.8 Ft

Obs: Service Connection

Comments:



Date: 09/26/2012

Distance: 84.4 Ft

Obs: Break in Connection

Comments:



Date: 09/26/2012 Distance: 87.0 Ft

Obs: Service Connection

Comments:



Date: 09/26/2012

Distance: 87.6 Ft

Obs: Debris (Grease)

Comments:



Date: 09/26/2012 Distance: 115.6 Ft Obs: Debris (Grease)

Comments: CONTINUING



Date: 09/26/2012 Distance: 139.2 Ft

Obs: Service Connection



X for Bureau Veritas NA

Work Order	Video	Surveyed On 09/26/2012	Direction Upstream	Setup 27	
Street Name Barbara Worth Rd	City Name Holtville	We	Weather Dry		
Location		From Manhole 09	To Manhole 10		

Date: 09/26/2012 Distance: 152.4 Ft

Obs: Service Connection

Comments:



Date: 09/26/2012 Distance: 166.5 Ft Obs: Debris (Grease)

Comments: CONTINUING



Date: 09/26/2012 Distance: 196.6 Ft

Obs: Plugged Connection



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for Bureau Veritas NA

Work Order	Contract	٧	7ideo	Setup 30 Surveyed On 09/27/2012		
Facility	Operator NJP	Var	Ref 10			
Street Name Barbara Worth I	Or	City Holt	ville			
Location type						
Surface						
Survey purpose Random survey	of pipes and things	Weath	er Dry			
Pipe Use Sanitary	Sched ler	gth Ft	From 11	0	epth F	
Shape Circular	Size 8 by	ins	To 07		epth F	
Material Vitrified clay	Joint Spacing	Ft	Direction Dov	٧n		
Lining	Year laid		Pre-clean N	Last Clean	ed	
General note Created Survey, Co	ould not attempt line.		Structural	Service	Construction	
Location note			Miscellaneous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		МН	Manhole/Node					11
	0.0		WL	Water level				0	
	0.0		GO	General observation		<u> </u>			US AND DS MH'S BURIED/NOT FOU
	0.0		GO	General observation					COULD NOT ATTEMPT LINE

0.0 Ft Total Length Surveyed

The state of the s	T-1		her colorabil	Taring of the Control
Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Work Order	Contract	VI	deo	Setup 16		
Facility	Operator NJP	Van	Ref 10	Surveyed	On 09/24/	2012
Street Name Fairway Dr (G	Golf Course)	City Hoity	ille		_	
Location type						
Surface						
Survey purpose Random surve	ey of pipes and things	Weathe	r Dry			
Pipe Use Sanitary	Sched le	ngth Ft	From 12		Depth	FI
Shape Circular	Size 8 by	y ins	To 11		Depth	FI
Material Vitrified day	Joint Spacing	y Ft	Direction Dov	VΠ		
Lining	Year laid		Pre-clean N	Last Clea	ned	
General note			Structural	Service	Consti	ruction
Location note			Miscellaneous	Hydraulic		
/ideo Count CD Code		Sev Fr 1	o Value Remark	ks		

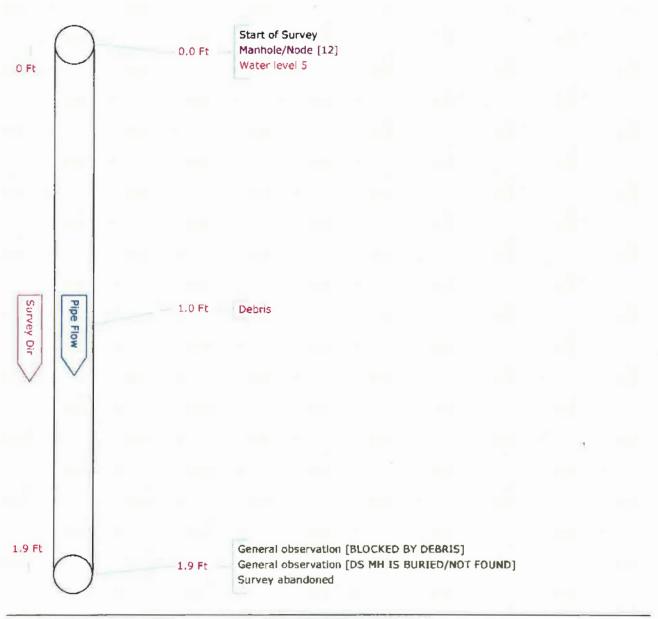
Video	Count	ÇD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		MH	Manhole/Node					12
	0.0		WL	Water level				5	
	1.0	İ	DE	Debris	L				
	1.9		GO	General observation					BLOCKED BY DEBRIS
	1.9		GO	General observation					DS MH IS BURIED/NOT FOUND
	1.9		SA	Survey abandoned					_

1.9 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 78.9



Plpe Gra	phic Rep	ort of PLR	12		X	-	100.00	for	Bure	au V	erita	s NA			
Work Orde Facility	r		Contrac Oper		NJP			Video Van	Ref 1	0		Surveye	etup d On	16 09/24/20	12
Street Nam Location t Surface Survey pu	уре	airway Dr (Golf		things		City		Holtvi		athe	or D	iry	11		
Pipe Use	Sanitary	- "		Schee	dule	length		Ft	From	12			Dept	h	Ft
Shape	Circular			Size	8	by	ins		То	11			Dept	h	Ft
Material	Vitrified cla	ay		Joint	spac	ing	Ft		Direct	lon	Dow	mstream			
Lining				Year	lald				Pre-cl	ean	N	Last clea	ned		
General no	ote								Struct	ural		Service	(Canstructio	nal
Location n	ote								Misce	llane	ous	Hydraulic			





CCTV pictures of 12 X

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 16
Street Name Fairway Dr (Golf Course)	City Name Holtville	We	ather Dry	
Location		From Manhole 12	To Manhole 11	

Date: 09/24/2012 Distance: 1.0 Ft Obs: Debris



Work Order	Contract	٧	ideo	Set	up 14	
Facility	Operator NJP	Van	Ref 10	Surveyed C	On 09/24/2012	2
Street Name Fatrway Dr (Go	off Course)	City Holt	ville			
Location type						
Surface						
Survey purpose Random survey	of pipes and things	Weath	er Dry	100		
Pipe Use Sanltary	Sched len	gth Ft	From 13	D	epth F	Ft
Shape Circular	Size 8 by	ine	To 12	D	epth F	Ft
Material Vitrified clay	Joint Spacing	Ft	Direction Dow	vn		
Lining	Year laid		Pre-clean N	Lest Clean	ed	
General note			Structural	Service	Construction	ma
Location note			Miscellaneous	Hydraulic		

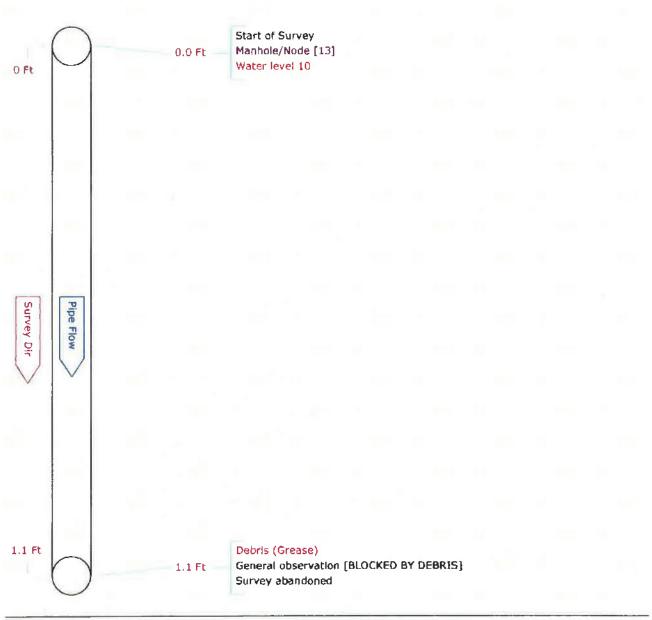
	CD	Code		Sev	Fr	To	Value	Remarks
0.0		ST	Start of Survey					
0.0		МН	Manhole/Node					13
0.0		WL	Water level				10	
1.1		DEG	Debris (Grease)	L				
1.1		GO	General observation					BLOCKED BY DEBRIS
1.1	17	SA	Survey abandoned					
֡֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜	0.0 0.0 1.1 1.1	0.0 0.0 1.1 1.1	0.0 MH 0.0 WL 1.1 DEG 1.1 GO	0.0 MH Manhole/Node	0.0 MH Manhole/Node	0.0 MH Manhole/Node	0.0 MH Manhole/Node	0.0 MH Manhole/Node 0.0 WL Water level 10 1.1 DEG Debris (Grease) L 1.1 GO General observation

1.1 Ft Total Length Surveyed

Scores

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 136.4

Pipe Gra	phic Report of PL	R 13	X	fo	r Bureau Verita	as NA	
Work Orde	91'	Contract	NJP	Vide Va	o n Ref 10	Setup Surveyed On	14 09/24/2012
Street Nan	ne Fairway Dr (C		City	Holt			10000
Location (ype						
Surface					444		
Survey pu	Irpose Random surv	ey of pipes and things			Weather D	ry	
Pipe Use	Sanitary	Sche	dule length	Ft	From 13	Dept	h Ft
Shape	Circular	Size	8 by	ins	To 12	Depti	n Ft
Material	Vitrifled clay	Join	t spacing	Ft	Direction Dov	vnetream	
Lining		Year	r laid		Pre-clean N	Last cleaned	
General ne	ote				Structural	Service C	Constructional
Location r	ote				Miscellaneous	Hydraulic	





				-										
Work	Order			Contract	Contract			1	Vlde	90		Setup 15		
Fa	cility			Operator	Operator NJP			Van Ref 10				Surveyed On 09/24/2012		/2012
Stre	et Name	Fair	way Or (Golf Course)			City	Ho	ltville	9				
Loca	tion type													
	Surface													
Survey	purpose	Rand	lom surv	ey of pipes and the	ings		W	eat	her	Dry				_
Pipe	Use Sani	lary	_		Sche	d length		F	t	From	12		Depth	Ft
Sh	apa Circu	ılar			Size 8	by	ins	;		To	13		Depth	Ft
Material Vitrified clay				Joint Spacing Ft				Direc	tion Up					
Lir	ing				Year lai	d				Рге-с	lean N	Last C!	eaned	
Gener	al note								П	Struct	ural	Service	Const	ructiona
Locatio	n note									Misce	llaneous	Hydraulic		
Video	Count	CD	Code	<u> </u>			Sev	Fr	To	Value	Remari	ks		
	0.0		ST	Start of Survey		·						_		
	0.0		MH	Manhole/Node							12			_
	0.0		WL	Water level				<u> </u>		5				
	2.0		DE	Debris			L							
	2.0		GO	General observat	lion						BLOCK	ED BY DEB	RIS	

2.0 Ft Total Length Surveyed

Survey abandoned

-					
-	-	-	-	-	-
S		61	и	м	

2.0

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 75



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for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 14
Street Name Fairway Dr (Golf Course)	City Name Holtville	Weather Dry		
Location		From Manhole 13	To Manhole 12	

Date: 09/24/2012
Distance: 1.1 Ft
Obs: Debris (Grease)



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for Bureau Veritas NA

Work Order	Contract	V	deo	Set	up 13	
Facility	Operator NJP		Ref 10	Surveyed On 09/24/2012		
Street Name Fairway I Location type Surface		City Hoth				
Survey purpose Random s	curvey of pipes and things	Weath	er Dry			
Pipe Use Sanitary	Sched len	gth Ft	From13		epth Ft	
Shape Circular	Size 8 by	ins	To 14		Depth Ft	
Material Vitrified clay	Joint Spacing	Ft	Direction Up			
Lining	Year laid		Pre-clean N	Last Clear	ned .	
General note	·		Structural	Service	Constructiona	
Location note			Miscellaneous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	То	Value	Remarks
	0.0		ŞT	Start of Survey					
	0.0		МН	Manhole/Node	Ì				13
	0.0		WL	Water level	Ĭ			5	
	1.1		DEG	Debris (Grease)	L				IN MH
	4.9		GO	General observation					BLOCKED IN MH BY DEBRIS
	4.9		SA	Survey abandoned					

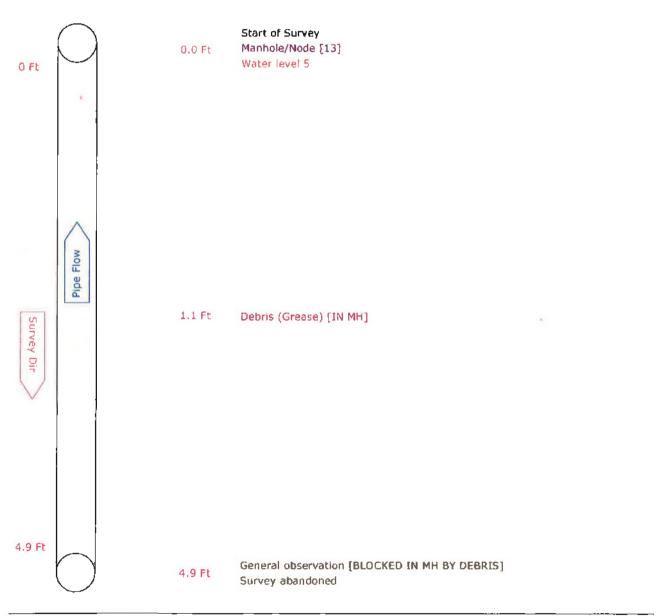
Total Length Surveyed

Scores

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 30.6



Work Orde Facility	ır	Contrac Ope	• • •	deo Van Ref		Sett Surveyed		13 09/24/2012			
Street Nan	ne	Fairway Dr (Golf Course)		City	н	oltville					
Location to Surface Survey pu		Random survey of pipes an	d things			W	eathe	er C	Ory		
Pipe Use	Sanitary	,	Schedule	length	Ft	Fron	13		(Depth	Ft
Shape	Circular		Size 8	by	ins	То	14)epth	Ft
Material	Vitrified	ctay	Joint space	cing	Ft	Direc	tion	Ups	streem		
Lining			Year laid			Pre-c	lean	N	Last cleans	d	
General no	ote	-				Struc	tural		Service	Co	nstructional
Location n	rote					Misc	ellane	ous	Hydraulic		4





Tabular Report of PLR 14

X

for Bureau Veritas NA

Work	Order			Contract				,	Vide	90		S	etup 12	
F	acility			Operator	NJP			Va	n R	ef 10		Surveyed On 09/24/2012		
Str	reet Name	Fair	way Dr (Golf Course)			City	Но	Itville	9		•		
Loca	ation type													
	Surface	i												
Survey	purpose	Rand	lom surv	ey of pipes and thi	ngs		V	Veat	her	Dry				
Pipe	Use Sani	tary			Sc	hed length	1	F	t	From	14		Depth	Ft
SI	h ape Circu	ular			Size 8	re-8 by ins			To	13		Ft		
Mate	erial Vitrifi	ied da	зу		Joint 9	pacing	Ft		1	Direc	tion Dow	'n	•	
Li	ning		•		Year	laid			1	Pre-c	lean N	Last Cle	aned	
" Gener	ral note		_			_			\Box	Struct	urat	Service	Constr	uctiona
Location	on note									Misce	llaneous	Hydraulle		
Video	Count	CD	Code				Sev	Fr	To	Value	Remark	s	·	
	0.0	_	ST	Start of Survey			Τ						-	
	0.0		МН	Manhole/Node							14			•

			•
1.	.1	Ft	Total Length Surveyed

Water level

General observation

Survey abandoned

Debris

WL

DE

GO

SA

-				
~	e.	т.	0	c

0.0

1.1

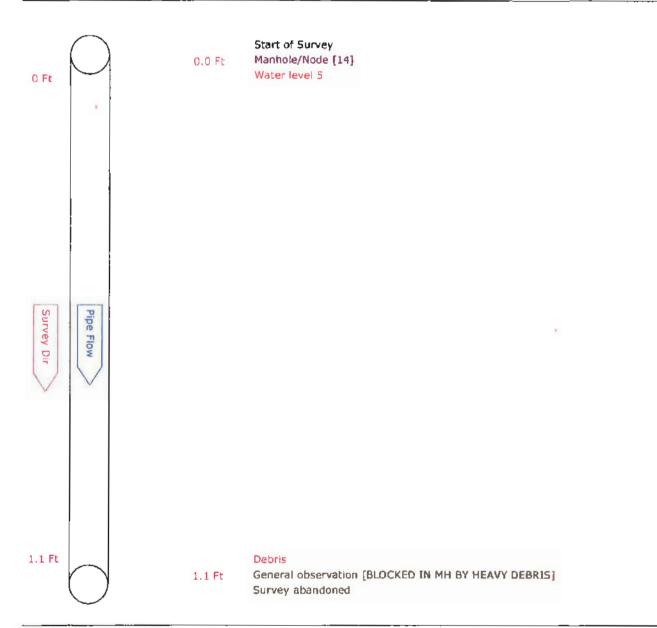
1.1

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 136.4

BLOCKED IN MH BY HEAVY DEBRIS



po o.u	pino ite	POIL OFF LIKE 14									
Work Orde Facility	or	Contrac Oper		Vide Vai	n Ref 10		Survey:		12 09/24/2012		
Street Nan Location t		Fairway Dr (Golf Course)	City Haltille								
Surface Survey pu	грове	Random survey of pipes and	d things				Wes	ther	Dry		
Pipe Use	Senitary		Schedule	length		Ft	From	14		Depth	Ft
Shape	Circular		Size 8	by	іпв		To	13		Depth	Ff
Material	Vitrified (clay	Joint spa	icing	Ft		Direction	on D	ownstream		
Lining			Year laid	l			Pre-clea	an N	Last cle	aned	
General no				_	_		Structu		Service Hydraulic		onstructional





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for Bureau Veritas NA

	Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 12
	Street Name Fairway Dr (Golf Course)	City Name Holtville	We	ather Dry	
!	Location		From Manhole 14	To Manhole 13	ļ

Date: 09/24/2012 Distance: 1.1 Ft Obs: Debris

Comments:



Tabular Report of PLR 15

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for Bureau Veritas NA

Work	Order			Contract					Vide	ю	5	etup 11	
F	acility			Operator	NJP			Va	n R	ef 10	4/2012		
Str	reet Name	Fain	way Dr (Golf Course)			City	Но	Itville	9			
Loce	ation type												
	Surface												
Surve	y purpo se	Rand	om surv	ey of pipes and th	ings		W	/eat	her	Dry			
Pipe	Use Senit	ary			Sch	ed length		F	t	From14		Depth	Ft
5h	hape Circu	lar			Size 8	by	ins	3		To 15		Depth	Ft
Mate	erial Vitrifi	ed cia	ıy		Joint Sp	acing	Ft			Direction Up			
Li	ning		_		Year la	id				Pre-clean N	Last Cle	ened	
Gener	ral note									Structural	Service	Cons	tructiona
Locatio	on note									Miscellaneous	Hydraulic		
Video	Count	ÇD	Code				Sev	Fr	To	Value Remark	6		
	0.0		ST	Start of Survey			1			_			-

Video	Count	ÇD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		MH	Manhole/Node					14
	0.0		WL	Water level				3	N. 200
	1.0		DE	Debris	L				IN MH
	1.0		GO	General observation					BLOCKED BY DEBRIS IN MH
	1.0		SA	Survey abandoned	1				

1.0 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 150



Work Order	Contract			Vide	90	Set	up 10	
Facility	Operator NJP			Van R	ef 10	Surveyed (On 09/24/2	012
Street Name Fairway D	or (Golf Course)		City	Holtville)		_	
Location type								
Surface								
Survey purpose Random 8	urvey of pipes and things		W	eather	Dry			
Pipe Use Sanitary		Sched lengt	h	Ft	From 15	D	epth	Ft
Shape Circular	Size	8 by	ins		To 14	٥	epth	Ft
Material Vitrified clay	Joint	\$pacing	Ft		Direction Dow	'n		
Lining	Yes	r laid			Pre-clean N	Last Clean	ed	
General note				_ "	Structural	Service	Constru	ctional
Location note					Miscellaneous	Hydraulic		

Video	Count	ÇD	Code		Sev	Fr	To	Value	Remarks
_	0.0		ST	Start of Survey					
-	0.0		МН	Manhole/Node		L_			15
	0.0		WL	Water level				5	
	2.0	Ī	DEG	Debris (Grease)	L				
	4.0		DEG	Debris (Grease)	L	,			50% OF PIPE FULL OF GREASE
	4.0		GÖ	General observation					BLOCKED BY GREASE
	4.0	_	SA	Survey abandoned					

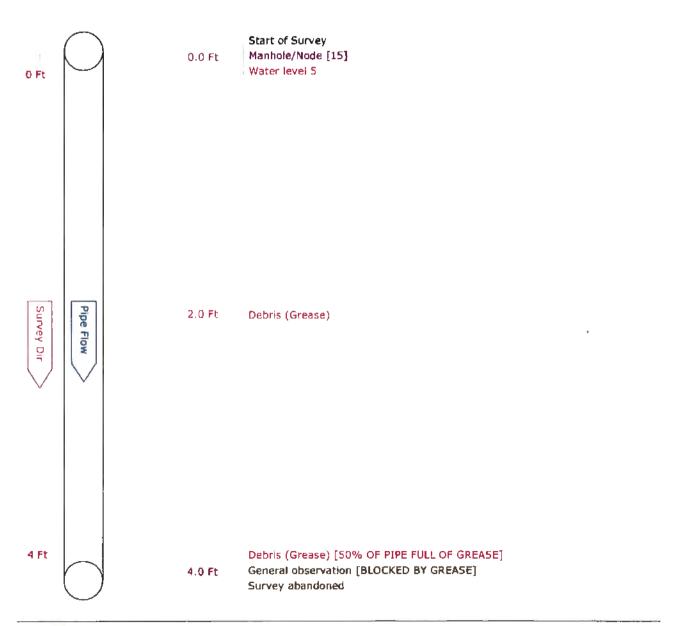
4.0 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 300	Mean Defect 100	Peak 150	Mean Pipe 75



Miscellaneous

Hydraulic





Location note

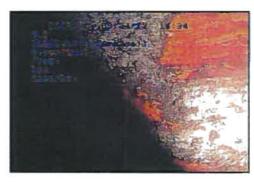
X

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 10
Street Name Fairway Dr (Golf Course)	City Name Holtville	We	ather Dry	
Location		From Manhole 15	To Manhole 14	

Date: 09/24/2012 Distance: 2.0 Ft Obs: Debris (Grease)

Comments:

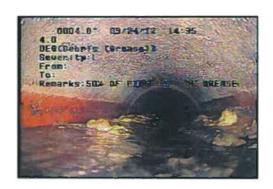


Date: 09/24/2012 Distance: 4.0 Ft Obs: Debris (Grease)

Comments:

50% OF PIPE FULL OF

GREASE



Date: 09/24/2012 Distance: 4.0 Ft

Obs: General observation

Comments:

BLOCKED BY GREASE



Tabular Report of PLR 16

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for Bureau Veritas NA

Work Order	Contract			Vid	90	Set	up 9	
Facility	Operator NJP		Va	ın R	ef 10	Surveyed (On 09/24/2	1012
Street Name Fairway Dr			City Ho	ltville	е			
Location type								
Surface								
Survey purpose Random survey	of pipes and things		Weat	her	Dry			
Pipe Use Sanitary	Sch	ed length	F	t	From 15)epth	Ft
Shape Circular	Size 6	by	ins		To 16)epth	Ft
Material Vitrified clay	Joint Spe	acing	Ft		Direction Up			
Lining	Year la	lď			Pre-clean N	Last Clean	ed	
General note	•				Structural	Service	Constru	ictional
Location note					Miscellaneous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		sr	Start of Survey			ĺ.,		
	0.0		МН	Manhole/Node					15
	0.0		WL	Water level		Ī		3	
	1.0	_	GO	General observation					US MH IS SURCHARGED, NO ACCES
	1.1		DEG	Debris (Grease)	L				AT ENTRANCE TO PIPE
·	1.1		GO	General observation					BLOCKED IN MH BY TIGHT BEND A
	1.1		SA	Survey abandoned					

1.1 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 136.4



Tabular Report of PLR 17

X for Bureau Veritas NA

Contract		٧	ideo	Set	tup 8	
Operator NJP		Var	Ref 10	Surveyed	On 09/24/2	012
		City Holt	ville			
f pipes and things		Weath	er Dry			
Sch	ed length	Ft	From 17		Depth	F
Size 6	by	ine	To 16		Depth	FI
Joint Spa	cing	Ft	Direction Dov	₩n		
Year la	ld		Pre-clean N	Last Ciear	ned	
			Structural	Service	Constru	ctions
			Miscellaneous	Hydraulic		
	Operator NJP of pipes and things Sche Size 6 Joint Spa	Operator NJP of pipes and things Sched length	Operator NJP Var City Holt of pipes and things Weath Sched length Ft Size 6 by ine Joint Spacing Ft	Operator NJP Van Ref 10 City Holtville If pipes and things Weather Dry Sched length Ft From 17 Size 6 by ine To 18 Joint Spacing Ft Direction Down Pre-clean N Structural	Operator NJP Van Ref 10 Surveyed City Holtville Separate Size 6 by ine To 16 Direction Down Year laid Pre-clean N Lest Clear Structural Service	Operator NJP Van Ref 10 Surveyed On 09/24/2 City Holtville Splant Spacing Ft Direction Down Year laid Pre-clean N Last Cleaned Structural Service Constru

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		MH	Manhole/Node				MALT PARK	17
	0.0	171-72	WL	Water level				3	
	14.9		DEG	Debris (Grease)	L		= 20	- 00	102.10
25	23.3		DEG	Debris (Grease)	L				CONTINUING
	35.1		DEG	Debris (Grease)	L				CONTINUING
	41.1		GO	General observation					DS MH SURCHARGED. DID NOT ATT
	41.2		GO	General observation	- 11/2				BLOCKED BY GREASE
	41.2		SA	Survey abandoned					

41.2 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 450	Mean Defect 112.5	Peak 150	Mean Pipe 10.9



Hydraulic

Miscellaneous

O Ft		0.0 Ft	Manhole/Node [17] Water level 3
		14,9 Ft	Debris (Grease)
8	[a]	23.3 Ft	Debris (Grease) [CONTINUING]
Survey Dir	Pipe Flow	35.1 Ft	Debris (Grease) [CONTINUING]
		41.1 Ft	General observation [DS MH SURCHARGED. DID NOT ATTEMPT US RUN]
41.2 Ft		41.2 Ft	General observation [BLOCKED BY GREASE] Survey abandoned



Location note

X for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 8
Street Name Vista Verde Dr	City Name Holtville	We	ather Dry	
Location		From Manhole 17	To Manhole 16	

Date: 09/24/2012 Distance: 14.9 Ft Obs: Debris (Grease)

Comments:



Date: 09/24/2012 Distance: 35.1 Ft

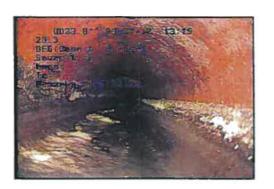
CONTINUING

Obs: Debris (Grease)



Date: 09/24/2012 Distance: 23.3 Ft Obs: Debris (Grease)

Comments:



Work Order	Contract		Vide	90	Set	up 7	
Facility	Operator NJP	V	an Re	ef 10	Surveyed (On 09/24/2	012
Street Name Vista Verde Dr		Clty H	oltville	9			
Location type							
Surface							
Survey purpose Random survey of	f pipes and things	Wea	ther	Dry			
Pipe Use Sanitary	Sched I	ength	Ft	From 18	0	Pepth	Ft
Shape Circular	Size 6	y Ins	- 1	To 17		Pepth	Ft
Material Vitrified clay	Joint Spacin	g Ft	- 1	Direction Dow	n		
Lining	, Year laid			Pre-clean N	Last Clean	ed	
General note				Structural	Service	Constru	ctional
Location note				Miscellaneous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		МН	Manhole/Node	3				18
	0.0		WL	Water level				3	
	2.0		CC	Circular Crack	S	12	12		
	17.0		ÇN	Service Connection		03			
	19.1		DEG	Debris (Grease)	L				
	68.1		C	Corrosion of Ct	M	01	06		
	77.5		CN	Service Connection		03			
	79.4		CN	Service Connection		09			
	140.8		DS	Begin Pipe Seg					
	147.5		CN	Service Connection		03			
	149.3		CN	Service Connection		09			
	151.0		DF	End pipe sag					
	197.7		DS	Begin Pipe Şag					
	213.1		CN	Service Connection		09			
	214.7		CN	Service Connection		03		3	
	220.8		GO	General observation					LARGE DEBRIS IN DS MH
	220.6		GO	General observation					SAG CONTINUES THROUGH MH
	221.6		МН	Manhole/Node					17
	221.8		FH	Finish of Surveys					

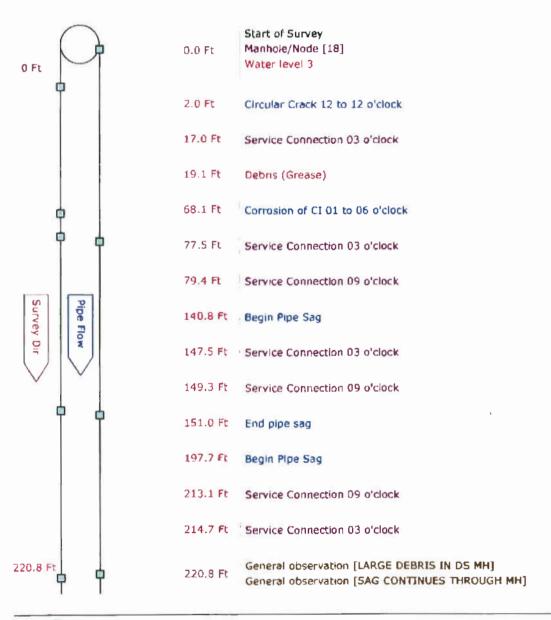
221.8 Ft Total Length Surveyed

Structural:	Total 300	Mean Defect 60	Peak 200	Mean Pipe 1.4
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 0.7



Miscellaneous

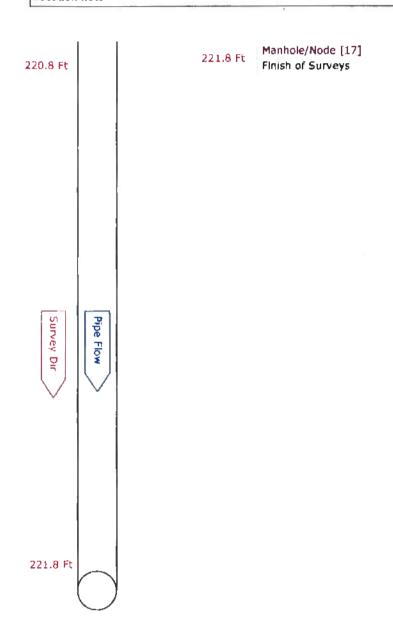
Hydraulic





Location note

Pipe Graphic Report of PLR 18	3 X	for Bure	au Verit	as NA	
Work Order Facility	Contract Operator NJP	Video Van Ref	10	Setup Surveyed On	7 09/24/2012
Street Name Vista Verde Dr Location type Surface	City	Haltvílle			
Survey purpose Random survey of	pipes and things	W	eather [Dry	
Pipe Use Senitary	Schedule length	Ft From	18	Dep	th Ft
Shape Circular	Size 6 by	ins To	17	Dep	th Ft
Material Vitrified day	Joint specing	Ft Direc	tion Do	wnstream	
Lining	Year Inid	Pre-c	lean N	Last cleaned	
General note		Struc	turaf	Service	Constructional
Location note		Misc	allaneous	Hydraulic	





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for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 7
Street Name Vista Verde Dr	City Name Holtville	We	ather Dry	
Location		From Manhole 18	To Manhole 17	

Date: 09/24/2012
Distance: 2.0 Ft
Obs: Circular Crack

Comments:



Date: 09/24/2012 Distance: 17.0 Ft

Obs: Service Connection

Comments:



Date: 09/24/2012 Distance: 19.1 Ft Obs: Debris (Grease)

Comments:



Date: 09/24/2012 Distance: 68.1 Ft Obs: Corrosion of Cl

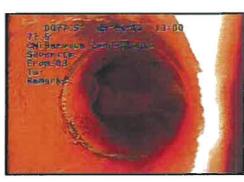
Comments:



Date: 09/24/2012 Distance: 77.5 Ft

Obs: Service Connection

Comments:



Date: 09/24/2012 Distance: 79.4 Ft

Obs: Service Connection

Comments:



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for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 7
Street Name Vista Verde Dr	City Name Holtville	We	ather Dry	
Location		From Manhole 18	To Manhole 17	

Date: 09/24/2012 Distance: 140.8 Ft Obs: Begin Pipe Sag

Comments:

0140 F 09/24/12 13:02
140.0
QS(Desin Proc Sad)
Seventus
From
To
Remarks

Date: 09/24/2012 Distance: 147.5 Ft

Obs: Service Connection

Comments:



Date: 09/24/2012 Distance: 149.3 Ft

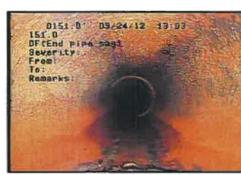
Obs: Service Connection

Comments:



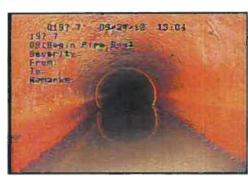
Date: 09/24/2012 Distance: 151.0 Ft Obs: End pipe sag

Comments:



Date: 09/24/2012 Distance: 197.7 Ft Obs: Begin Pipe Sag

Comments:



Date: 09/24/2012
Distance: 213.1 Ft
Obs: Service Connection

Comments:



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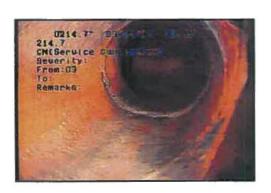
for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 7
Street Name Vista Verde Dr	City Name Holtville	We	ather Dry	
Location		From Manhole 18	To Manhole 17	

Date: 09/24/2012 Distance: 214.7 Ft

Obs: Service Connection

Comments:

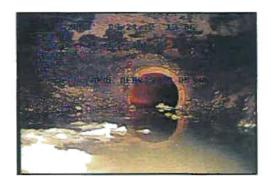


Date: 09/24/2012 Distance: 220.8 Ft

Oba: General observation

Comments:

LARGE DEBRIS IN D\$ MH



Tabular Report of PLR 19

X

for Bureau Veritas NA

Work Order	Contract		Vid	90	Setu	up 5
Facility	Operator NJP		Van R	lef 10	Surveyed C	n 09/24/2012
Street Name Fairway Dr Location type Surface Survey purpose Random surve	ey of pipes and things		Holtvill			
Pipe Use Sanitary	Scho	ed length	Ft	From 19	D	epth F
Shape Circular	Size 8	b y i ns	5	To 16		epth F
Material Vitrified clay Lining	Joint Spa Year lai			Direction Dow Pre-clean N	n Leet Cleane	ed
General note				Structural Miscellaneous	Service Hydraulic	Construction

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		MH	Manhole/Node					19
	0.0		WL	Water level				3	
	2.0		DEG	Debris (Grease)	L				
	20.9		DEG	Debris (Grease)	L				CONTINUING
493 - H	69.6		DEG	Debris (Grease)	L				CONTINUING
	78.9		СВ	Break in Connection		12			
	81.2		GO	General observation					DS MH SURCHARGED DID NOT ATT
	81.3		GO	General observation					BLOCKED BY GREASE
	81.3		SA	Survey abandoned					

81.3 Ft **Total Length Surveyed**

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 450	Mean Defect 112.5	Peak 150	Mean Pipe 5.5



0 Ft		0.0 Ft	Manhole/Node [19] Water level 3
		2.0 Ft	Debris (Grease)
		28.9 Ft	Debris (Grease) [CONTINUING]
Survey Dir	Pipe Flow	69.6 Ft	Debris (Grease) [CONTINUING]
		78.9 Ft	Break in Connection 12 o'clock
		81.2 Ft	General observation [DS MH SURCHARGED. DID NOT ATTEMPT US RUN]
81.3 Ft		81.3 Ft	General observation [BLOCKED BY GREASE] Survey abandoned

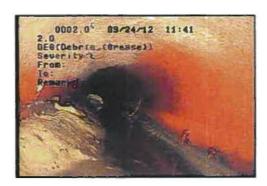


X for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 5
Street Name Fairway Dr	City Name Holtville	We	ather Dry	
Location		From Manhole 19	To Manhole 16	

Date: 09/24/2012
Distance: 2.0 Ft
Obs: Debris (Grease)

Comments:



Date: 09/24/2012 Distance: 69.6 Ft Obs: Debris (Grease)

Comments:



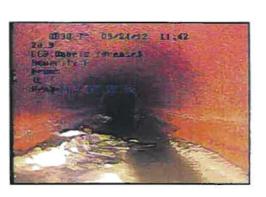
Date: 09/24/2012 Distance: 28.9 Ft Obs: Debris (Grease)

Comments:



Obs: Break in Connection

Comments:





Tabular Report of PLR 20

X

for Bureau Veritas NA

abdidi importori Erit Av		101		- Formation			
Work Order	Contract		VId	80	Set	tup 6	
Facility	Operator NJP		Van R	ef 10	Surveyed	On 09/24/20	12
Street Name Camino Verde D)r	Cit	y Holtvill	e	-		
Location type							
Surface							
Survey purpose Random survey	of pipes and things	1	Weather	Dry			
Pipe Use Sanitary	Sched I	ength	Ft	From 20		Depth	Ft
Shape Circular	Size 6	oy in	5	To 19		Depth	Ft
Material Vitrified clay	Joint Spacin	ig Fl		Direction Dow	n		
Lining	Year laid	X88		Pre-clean N	Last Clear	red	
General note				Structural	Service	Construct	tional
Location note				Miscellaneous	Hydraulic		

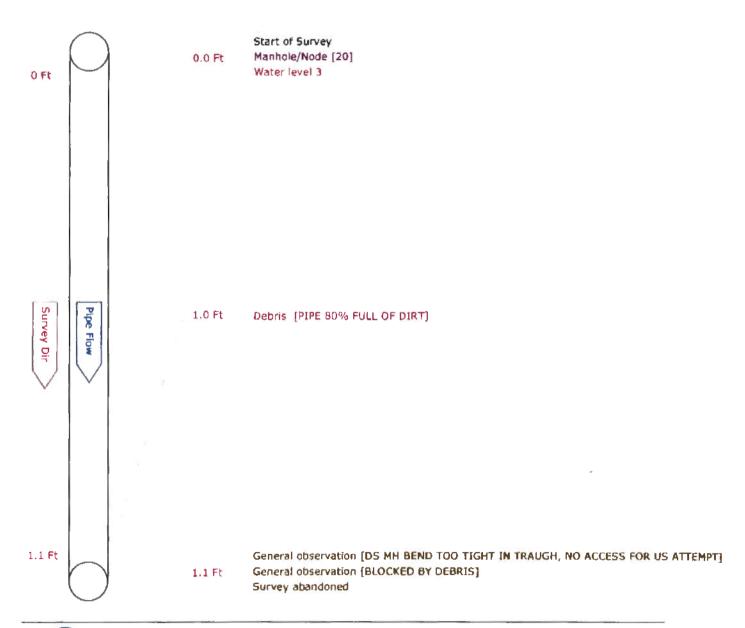
Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0	3	MH	Manhote/Node					20
	0.0		WL	Water level				3	
	1.0		DE	Debris	L				PIPE 80% FULL OF DIRT
	1.1		GO	General observation					DS MH BEND TOO TIGHT IN TRAUG
	1.1	8	GO	General observation					BLOCKED BY DEBRIS
	1.1		SA	Survey abandoned					

1.1 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 136.4



Pipe Gra	phic Report of PLR 20	X	for	Bureau Verita	as NA	
Work Orde Facility		erator NJP	Vide Va	o n Ref 10	Setup Surveyed On	6 09/24/2012
Street Nam Location t Surface Survey pu	уре	City and things	Holts	oz. 6)ry	
Pipe Use	Sanitery	Schedule length	Ft	From 20	Depth	Ft
Shape Material Lining	Circular Vitrified clay	Size 8 by Joint spacing Year laid	ins Ft	To 19 Direction Dov	Depth vnstream Last cleaned	Ft
General no				Structural Miscellaneous	Service Co	nstructional





CCTV pictures of 20 X for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream Setup 6	
Street Name Camino Verde Dr	City Name Holtville	Wes	ather Dry	
Location		From Manhole 20	To Manhole 19	

Date: 09/24/2012 Distance: 1,0 Ft Obs: Debris

Comments:

PIPE 80% FULL OF DIRT



Work Order	Contract	Vi	leo	Setup	3
Facility	Operator NJP	Van	Ref 10	Surveyed Or	09/24/2012
Street Name Fairway Dr		City Holtvi	lle		
Location type					
Surface	V-0-	6070 D			
Survey purpose Random survey	of pipes and things	Weathe	r Dry		
Pipe Use Senitary	Sched leng	rth Ft	From21	De	pth Ft
Shape Circular	Size 8 by	ins	To 19	De	pth Ft
Material Vitrified clay	Joint Spacing	Ft	Direction Dow	'n	
Lining	Year laid		Pre-clean N	Last Cleaned	d
General note			Structural	Service	Constructions
Location note			Miscellaneous	Hydraulic	

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		МН	Manhole/Node					21
	0.0		WL,	Water level				3	
	8.1		DEG	Debris (Grease)	L				
93	30.2		СВ	Break in Connection		02		677 600	
	40.7	- 3	CN	Service Connection		03			
	43.6		CN	Service Connection		09			
	65.6		DEG	Debris (Grease)	L				CONTINUING
	101.8		CRA	Roots around Lateral	L	12			
	102.1		СВ	Break in Connection		12			
	112.4		CN	Service Connection		03			
	115.3		CN	Service Connection		09			
	117.2		DEG	Debris (Grease)	L				CONTINUING
	134.2		GO	General observation					BLOCKED BY HEAVY GREASE
	134.2		SA	Survey abandoned					

134.2 Ft Total Length Surveyed

Structural: Service: Total 0 Total 525 Mean Defect 0 Mean Defect 105 Peak 0 Peak 150 Mean Pipe 0 Mean Pipe 3.9 Scores



Service

Hydraulic

Structural

Miscellaneous

Constructional

o Ft		0.0 Ft	Start of Survey Manhole/Node [21] Water level 3
		8.1 Ft	Debris (Grease)
t		30.2 Ft	Break in Connection 02 o'clock
ı		40.7 Ft	Service Connection 03 o'clock
		43.6 Ft	Service Connection 09 o'clock
Shu	P N	65.6 Ft	Debris (Grease) [CONTINUING]
Survey Dir	Pipe Flow	101.8 Ft	Roots around Lateral 12 o'clock
\vee		102.1 Ft	Break in Connection 12 o'clock
		112.4 Ft	Service Connection 03 o'clock
1		115.3 Ft	, Service Connection 09 o'clock
		117.2 Ft	Debris (Grease) [CONTINUING]
134.2 Ft		134,2 Ft	General observation [BLOCKED BY HEAVY GREASE] Survey abandoned



General note

Location note

X

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 3
Street Name Fairway Dr	City Name Holtville	We	ather Dry	
Location		From Manhole 21	To Manhole 19	

Date: 09/24/2012 Distance: 8.1 Ft

Obs: Debris (Grease)

Comments:



Date: 09/24/2012

Distance: 30.2 Ft

Obs: Break in Connection

Comments:



Date: 09/24/2012 Distance: 40,7 Ft

Obs: Service Connection

Comments:



Date: 09/24/2012

Distance: 43.6 Ft

Obs: Service Connection

Comments:



Date: 09/24/2012 Distance: 65.6 Ft Obs: Debris (Grease)

Commenta:



Date: 09/24/2012
Distance: 101.8 Ft
Obs: Roots around
Lateral

Comments:



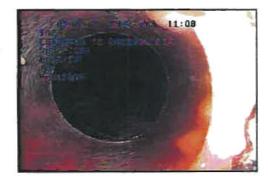
X for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 3
Street Name Fairway Dr	City Name Holtville	We	eather Dry	
Location		From Manhole 21	To Manhole 19	

Date: 09/24/2012 Distance: 102.1 Ft

Obs: Breek in Connection

Comments:



Date: 09/24/2012 Distance: 115.3 Ft

Obs: Service Connection

Comments:



Date: 09/24/2012
Distance: 134.2 Ft
Obs: General observation

Comments:

BLOCKED BY HEAVY

GREASE



Data: 09/24/2012 Distance: 112.4 Ft

Obs: Service Connection

Comments:



Date: 09/24/2012 Distance: 117.2 Ft Obs: Debris (Grease)

Comments:



Work Order	Contract			Vid	90	Set	up 4	
Facility	Operator NJP			Van R	ef 10	Surveyed (On 09/24/	2012
Street Name Fairway Dr			City	Holtvill	9			
Location type								
Surface								
Survey purpose Random survey	of pipes and things		W	eather	Dry		227	
Pipe Use Sanitary	Sc	hed length	1	Ft	From 19		epth	Ft
Shape Circular	Size 8	by	ine		To 21	0	epth	Ft
Material Vitrified clay	Joint S	pacing	Ft		Direction Up			
Lining	Year	ald			Pre-clean N	Last Clean	ed	
General note					Structural	Service	Constr	uctional
Location note					Miscellaneous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	То	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		MH	Manhole/Node					19
	0.0		WL	Water level				3	
	6.1		CN	Service Connection		03			
	8.0		DEG	Debris (Grease)	L				
120	33.8		DEG	Debris (Grease)	L				
2292	33.8	MIT TUAN	GO	General observation					BLOCKED BY GREASE
	33.8		SA	Survey abandoned					

33.8 Ft Total Length Surveyed

Scores

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 300	Mean Defect 100	Peak 150	Mean Pipe 8.9



Lining Year iald Pre-clean N Last cleaned

General note Structural Service Constructional
Location note Miscellaneous Hydraulic

ins

Ft

by

To

21

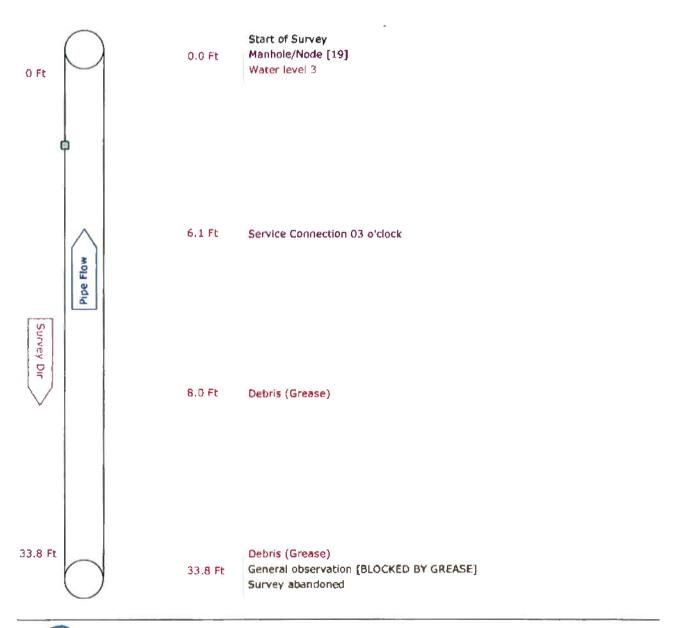
Direction Upstream

Depth

Ft

Size 8

Joint spacing





Shape

Material

Circular

Vitrified clay

X

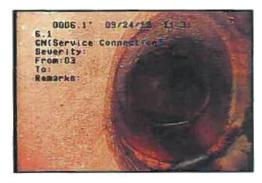
for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Upstream	Setup 4
Street Name Fairway Dr	City Name Holtville	We	ather Dry	And the Association
Location		From Manhole 19	To Manhole 21	

Date: 09/24/2012 Distance: 6.1 Ft

Obs: Service Connection

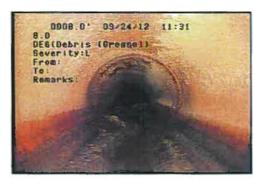
Comments:



Date: 09/24/2012 Distance: 8.0 Ft

Obs: Debris (Grease)

Comments:



Date: 09/24/2012 Distance: 33.8 Ft

Obs: Debris (Greese)

Comments:



Date: 09/24/2012 Distance: 33.8 Ft

Obs: General observation

Comments:

BLOCKED BY GREASE



Tabular Report of PLR 22 X for Bureau Veritas NA

Work Order	Contract	V	deo	Setu	p 1	
Facility	Operator NJP	Van	Ref 10	Surveyed O	n 09/24/201	2
Street Name Fairway Dr Location type Surface Survey purpose Random survey	of pipes and things	City Holt				
Pipe Use Sanitary	Sched ler	ngth Ft	From22	De	pth	Ft
Shape Circular	Size 8 by	Ins	To 21	De	pth	Ft
Material Vitrified clay	Joint Spacing	Ft	Direction Dow	m		
Lining	Year laid		Pre-clean N	Last Cleane	d	
General note US MH has no lid. Location note	MH as large amount of dirt		Structural Miscellaneous	Service Hydraulic	Constructi	ona

Video	Count	ÇD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		мн	Manhole/Node		8.3			22
	0.0		WL	Water level				0	
	0.0		DE	Debris	М				IN MH
	1.0		DE	Debris	L				90% OF PIPE AT MH
	1.0		GO	General observation					BLOCKED BY DEBRIS
- 55	1.0		SA	Survey abandoned					

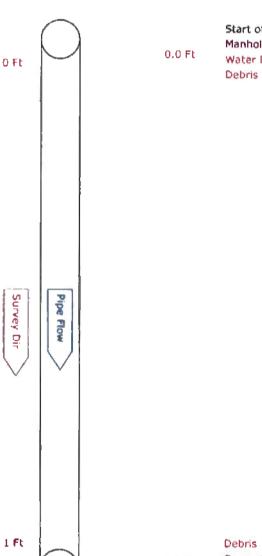
1.0 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 225	Mean Defect 75	Peak 150	Mean Pipe 225



Miscellaneous

Hydraulic



Location note

Start of Survey Manhole/Node [22] Water level 0 Debris [IN MH]

Debris [90% OF PIPE AT MH]

1.0 Ft General observation [BLOCKED BY DEBRIS]
Survey abandoned



CCTV pictures of 22 X for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Downstream	Setup 1
Street Name Fairway Dr	City Name Holtville	We	eather Dry	
Location		From Manhole 22	To Manhole 21	

Date: 09/24/2012 Distance: 1.0 Ft Obs: Debris

Comments:

90% OF PIPE AT MH



Work Order	Contract	Vi	deo	Setup 2		
Facility	Operator NJP	Van	Van Ref 10		On 09/24/2012	
Street Name Fairway Dr		City Holt	rille			
Location type						
Surface						
Survey purpose Random survey	of pipes and things	Weath	er Dry			
Pipe Use Sanitary	Sched i	ength Ft	From21		epth Ft	
Shape Circular	Size 8	y ins	To 22	0	epth Ft	
Material Vitrified clay	Joint Specin	g Ft	Direction Up			
Lining	Year laid		Pre-clean N	Last Clean	ed	
General note			Structural	Service	Constructiona	
Location note			Miscellaneous	Hydraulic		

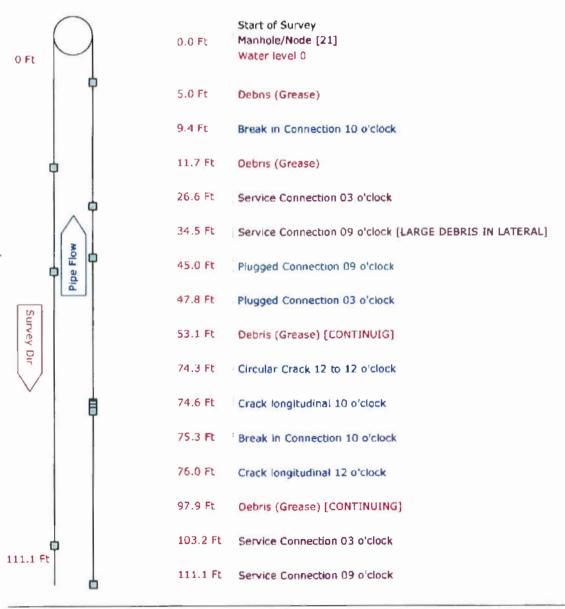
Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		MH	Manhole/Node	produce and discourse				21
	0.0		WL	Water level				0	
	5.0		DEG	Debris (Grease)	М			0.000	
	9.4		СВ	Break in Connection		10			
	11.7		DEG	Debris (Grease)	L	8 5			
	26.6		CN	Service Connection		03			
	34.5		CN	Service Connection		09			LARGE DEBRIS IN LATERAL
8 0	45.0		CP	Plugged Connection		09			
	47.8		CP	Plugged Connection		03			
	53.1	77	DEG	Debris (Grease)	L				CONTINUIG
	74.3		CC	Circular Crack	М	12	12		
	74.6		CL	Crack longitudinal	M	10			
	75.3		СВ	Break in Connection		10			
	76.0		CL	Crack fongitudinal	S	12			
	97.9		DEG	Debris (Grease)	L				CONTINUING
	103.2		CN	Service Connection		03			
	111.1		CN	Service Connection		09			5 14 50 70
	113.4		CP	Plugged Connection		02			
	179.3		ÇN	Service Connection		09			
	197.1		CN	Service Connection		09			V (2005)
	197.1		DE	Debris	Ł		L.		PIPE 80% FULL OF DIRT
	197.1		GO	General observation					BLOCKED BY DEBRIS
	197.1		SA	Survey abandoned					

197.1 Ft Total Length Surveyed

Structural:	Total 400	Mean Defect 50	Peak 150	Mean Pipe 2
Service:	Total 675	Mean Defect 112.5	Peak 150	Mean Pipe 3.4



	pinto reopore or r =1.		0.000			
Work Orde Facility	r	Contract Operator NJP	Vide Va	n Ref 10	,	2 09/24/2012
Street Nam Location t Surface Survey pu	урө	City y of pipes and things	Holt		Dry	
Pipe Use	Senitary	Schedule length	Ft	From 21	Depth	Ft
Shape	Circular	Size 8 by	ins	To 22	Depth	
Meterial	Vitrified clay	Joint spacing	Ft	Direction Up	stream	
Lining		Year laid		Pre-clean N	Last cleaned	
General no				Structural Miscellaneous	Service Co	onstructiona





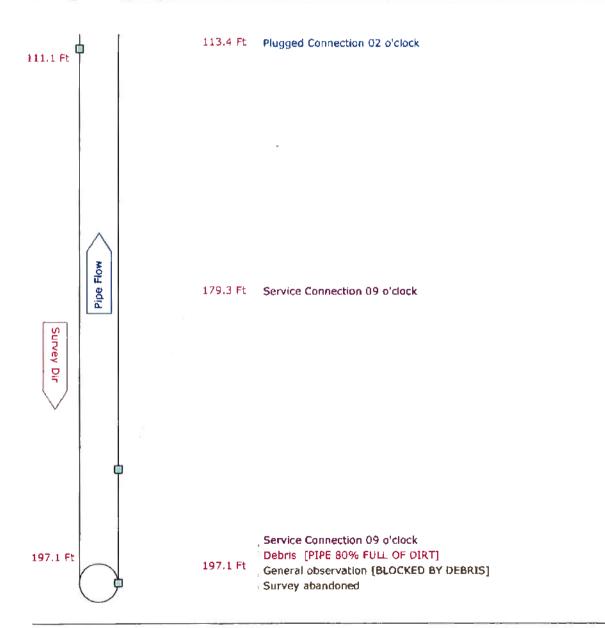
Structural

Miscellaneous

Service

Hydraulic

Constructional





General note

Location note

Х

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Upstream	Setup 2
Street Name Fairway Dr City Name Holtville		We	58 5885 100	
Location		From Manhole 21	To Manhole 22	

Date: 09/24/2012 Distance: 5.0 Ft Obs: Debris (Grease)

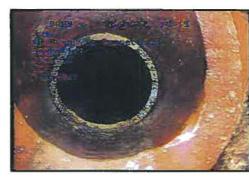
Comments:



Date: 09/24/2012 Distance: 9.4 Ft

Obs: Break in Connection

Comments:



Date: 09/24/2012 Distance: 11.7 Ft Obs: Debris (Grease)

Comments:



Date: 09/24/2012 Distance: 26.6 Ft

Obs: Service Connection

Comments:



Date: 09/24/2012 Distance: 34.5 Ft

Obs: Service Connection

Comments: LARGE DEBRIS IN LATERAL



Date: 09/24/2012 Distance: 45.0 Ft

Obs: Plugged Connection



X

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Upstream	Setup 2	
Street Name Fairway Dr	Name Fairway Dr City Name Holtville		Weather Dry		
Location		From Manhole 21	To Manhole 22		

Date: 09/24/2012 Distance: 47.8 Ft

Obs: Plugged Connection

Comments:



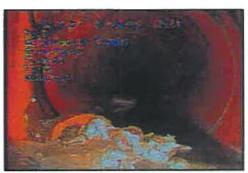
Date: 09/24/2012
Distance: 53.1 Ft
Obs: Debris (Grease)

Comments: CONTINUIG



Date: 09/24/2012
Distance: 74.3 Ft
Obs: Circular Crack

Comments:



Date: 09/24/2012 Distance: 74.6 Ft

Obs: Crack longitudinal

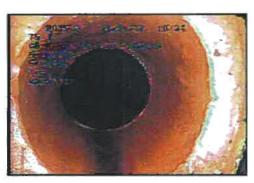
Comments:



Date: 09/24/2012 Distance: 75.3 Ft

Obs: Break in Connection

Comments:



Date: 09/24/2012 Distance: 76.0 Ft Obs: Crack longitudinal



X

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Upstream	Setup 2
Street Name Fairway Dr City Name Holtville		Weather Dry		
Location		From Manhole 21	To Manhole 22	

Date: 09/24/2012 Distance: 97.9 Ft Obs: Debris (Grease)

CONTINUING

Date: 09/24/2012 Distance: 111.1 Ft

Obs: Service Connection

Comments:

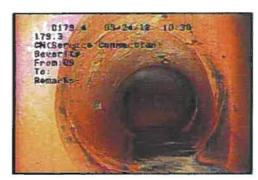
Date: 09/24/2012 Distance: 179.3 Ft

Obs: Service Connection

Comments:







Date: 09/24/2012 Distance: 103.2 Ft

Obs: Service Connection

Comments:



Date: 09/24/2012 Distance: 113.4 Ft

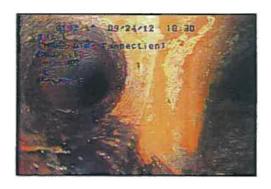
Obs: Pługged Connection

Comments:



Date: 09/24/2012 Distance: 197.1 Ft

Obs: Service Connection



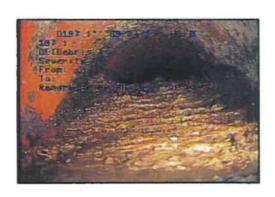
CCTV pictures of 22 X for Bureau Veritas NA

Work Order	Video	Surveyed On 09/24/2012	Direction Upstream	Setup 2	
Street Name Fairway Dr	City Name Holtville	Weather Dry			
Location		From Manhole 21	To Manhole 22		

Date: 09/24/2012
Distance: 197.1 Ft
Obs: Debris

Comments:

PIPE 60% FULL OF DIRT



for Bureau Veritas NA

Work Order	Contract	VI	deo	Set	up 17	
Facility	Operator NJP	Van	Ref 10	Surveyed On 09/25/2012		
Street Name Fairway Dr		City Holly	ille	7,000		
Location type						
Surface						
Survey purpose Random surve	y of pipes and things	Weathe	r Dry			
Pipe Use Sanitary	Sched le	ngth Ft	From 23	5	Pepth	F
Shape Circular	Size 8 by	y ina	To 15	0)epth	F
Material Vitrified clay	Joint Spacing	, Ft	Direction Dow	'n		
Lining	Year laid		Pre-clean N	Last Clean	ed	
General note	-		Structural	Service	Constru	ction
Location note			Miscellaneous	Hydraulic		

Count	CD	Code	W W GR	Sev	Fr	To	Value	Remarks
0,0		ST	Start of Survey					10 pt 100 pt
0.0	2	МН	Manhole/Node					23
0.0	9	WL	Water level				3	
2.0		DEG	Debris (Grease)	L				
2.0		GO	General observation					BLOCKED BY DEBRIS
2.0	S 2	SA	Survey abandoned			1		
	0,0 0.0 0.0 2.0 2.0	0.0 0.0 0.0 2.0 2.0	0.0 MH 0.0 WL 2.0 DEG 2.0 GO	0.0 ST Start of Survey 0.0 MH Manhole/Node 0.0 WL Water level 2.0 DEG Debris (Grease) 2.0 GO General observation	0.0 ST Start of Survey 0.0 MH Manhole/Node 0.0 WL Water level 2.0 DEG Debris (Grease) L 2.0 GO General observation	0.0 ST Start of Survey 0.0 MH Manhole/Node 0.0 WL Water level 2.0 DEG Debris (Grease) 2.0 GO General observation	0.0 ST Start of Survey 0.0 MH Manhole/Node 0.0 WL Water level 2.0 DEG Debris (Grease) L 2.0 GO General observation	0.0 ST Start of Survey 0.0 MH Manhole/Node 0.0 WL Water level 2.0 DEG Debris (Grease) 2.0 GO General observation

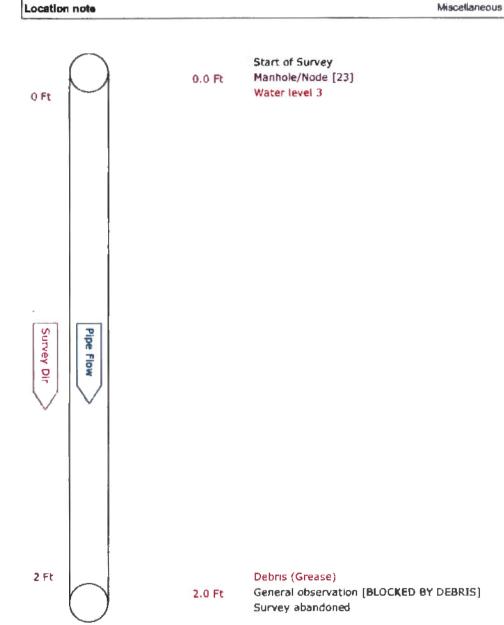
2.9 Ft Total Length Surveyed

Scores

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 150	Mean Defect 75	Peak 150	Mean Pipe 75



Hydraulic





for Bureau Veritas NA

Work Order	Contract	٧	ideo	Set	ப ற 16	
Facility	Operator NJP	Van	Ref 10	Surveyed On 09/25/201.		
Street Name Fairway Dr Location type Surface Survey purpose Random survey	of pipes and things	City Holt				
Pipe Use Sanitary	Sched In	ength Ft	From 24	D	epth Ft	
Shape Circular	Size 8 b	y ins	To 23	D	epth Ft	
Material Vitrified clay	Joint Spacing	g Ft	Direction Dow	'n		
Lining	Year laid		Pre-clean N	Last Clean	ed	
General note			Structural	Service	Constructions	
Location note			Miscellaneous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
19	0.0		MH	Manhole/Node					24
	0.0		WL	Water level		ĺ		5	
	18.1		DEG	Debris (Grease)	S				
	45.0		DE	Debris	L				
	103.3		DE	Debris	M				CONTINUING
	126.0		DE	Debris	L				CONTINUING
	159.5		CUB	Camera Submerged Begin					
	159.9		GO	General observation			28-2		BLOCKED BY DEBRIS
	159.9		SA	Survey abandoned					

159.9 Ft Total Length Surveyed

Scores

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 425	Mean Defect 70.8	Peak 150	Mean Pipe 2.7



Service

Hydraulic

Structural Miscellaneous Constructional

Year laid

0 Ft	\bigcirc	0.0 Ft	Start of Survey Manhole/Node [24] Water level S
		18.1 Ft	Debris (Grease)
		45.0 Ft	Debris
Survey Dir	Pipe Flow	103.3 Ft	Debris [CONTINUING]
		126.0 Ft	Debris [CONTINUING]
		159. 5 Ft	Camera Submerged Begin
159.9 Ft		159.9 Ft	General observation [BLOCKED BY DEBRIS] Survey abandoned



Lining

General note

Location note

X for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Downstream	Setup 18	
Street Name Fairway Dr	City Name Holtville	Weather Dry			
Location		From Manhole 24	To Manhole 23		

Date: 09/25/2012
Distance: 18.1 Ft
Obs: Debris (Greese)

Comments:

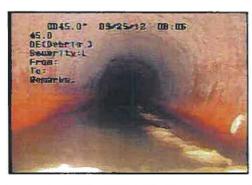
DURET UP OF THE MEDICAL PROPERTY OF THE PROPER

Obs: Debris

Date: 09/25/2012

Distance: 45.0 Ft

Comments:



Date: 09/25/2012 Distance: 103.3 Ft

Obs: Debris

Comments:

CONTINUING

Date: 09/25/2012 **Distance:** 126.0 Ft **Obs:** Debris

CONTINUING



X

for Bureau Veritas NA

addid Report of Lett Ed		101 00		TOTICAL ITE		
Work Order	Contract		Video)	Set	up 19
Facility	Operator NJP	V	an Ref	10	Surveyed (On 09/25/2012
Street Name Fairway Dr		City H	oltville			
Location type						
Surface						
Survey purpose Random survey	of pipes and things	Wea	ther	Dry		
Pipe Use Sanitary	Sched fer	ngth (Ft I	From 24	D	epth Ft
Shape Circular	Size 8 by	ins		To 25	D	epth Ft
Material Vitrified day	Joint Spacing	Ft		Direction Up		
Lining	Year laid			Pre-clean N	Last Clean	ed
General note				Structural	Service	Constructions
Location note				Miscellaneous	Hydraulic	

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
70 522	0.0		ST	Start of Survey			_		
	0.0		МН	Manhole/Node					24
	0.0	- 4	WL	Water level				5	
	31.1		DEG	Debris (Grease)	M				
	41.1		СВ	Break in Connection		09			LATERAL HAS DEBRIS
	72.3		CB	Break in Connection		12			
	104.5		СВ	Break in Connection		12			
	122.0		CXC	Connection defective	L	09			LARGE DEBRIS FROM LATERAL
	122.0		СВ	Break in Connection		09			
	187.7		CNI	Intruding Lateral	S	12		0010	
COAN.	187.8		СВ	Break in Connection		12			
	192.9		CP	Plugged Connection		10			
	272.9		CP	Plugged Connection		09			
5.51	283.6		CL	Crack longitudinal	S	12			
	283.8		CNI	Intruding Lateral	S	12		0005	
	283.8		CB	Break in Connection		12			
	348.6		RJ	Roots at joint	L.				TAP ROOTS
21 93	350.1		CR	Roots from lateral	L	12			LARGE TAP ROOTS
	350.1		СВ	Break in Connection		12			
	350.1		GO	General observation					BLOCKED BY LARGE TAP ROOTS
	350.1		SA	Survey abandoned	Der-				

350.1 Ft Total Length Surveyed

Scores

Structural:	Total 400	Mean Defect 30.8	Peak 150	Mean Pipe 1.1
Service:	Total 250	Mean Defect 62.5	Peak 100	Mean Pipe 0.7



Pipe Graphic Report of PLR 25 X for Bureau Veritas NA Work Order Contract Video Setup 19 Facility Operator NJP Van Ref 10 Surveyed On 09/25/2012 Street Name City Holtville Fairway Dr Location type Surface Survey purpose Random survey of pipes and things Weather Pipe Use Sanitary Schedule length Ft From 24 Depth Ft Size B Shape Circular by ins To 25 Depth Ft Material Vitrified clay Joint specing Ft Direction Upstream Lining Year laid Pre-clean Last cleaned General note Structural Service Constructional Location note Miscellaneous Hydraulic

350.1 Ft

348.6 Ft Pipe Flow Survey Dir 350.1 Ft

Roots from lateral 12 o'clock [LARGE TAP ROOTS]
Break in Connection 12 o'clock
General observation [BLOCKED BY LARGE TAP ROOTS]
Survey abandoned



Service

Hydraulic

Structural

Miscellaneous

Constructional

Start of Survey Manhole/Node [25] 0.0 Ft Water level 3 0 Ft 29.8 Ft Roots at joint [LARGE TAP ROOT] Survey Dir Pipe Flow Plugged Connection 03 o'clock 31.9 Ft General observation [POSSIBLE BREAK IN CONNECTION] 31.9 Ft General observation [REACHED OVERLAP POINT] Survey abandoned



General note

Location note

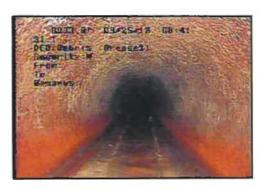
Х

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Upstream	Setup 19
Street Name Fairway Dr	City Name Holtville	We	ather Dry	- Cover De
Location		From Manhole 24	To Manhole 25	

Date: 09/25/2012 Distance: 31.1 Ft Obs: Debris (Grease)

Comments:



Date: 09/25/2012 Distance: 41.1 Ft

Obs: Breek in Connection

Comments:

LATERAL HAS DEBRIS



Date: 09/25/2012 Distance: 72.3 Ft

Obs: Break in Connection

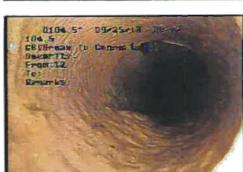
Comments:



Date: 09/25/2012 Distance: 104.5 Ft

Obs: Break in Connection

Comments:



Date: 09/25/2012 Distance: 122.0 Ft Obs: Connection

defective

Comments:

LARGE DEBRIS FROM LATERAL



Date: 09/25/2012 Distance: 122.0 Ft

Obs: Break in Connection



X

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Upstream Setup			
Street Name Fairway Dr	City Name Holtville	We	Weather Dry			
Location		From Manhole 24	To Manhole 25			

Date: 09/25/2012
Distance: 187.7 Ft
Obs: Intruding Lateral

Comments:



Date: 09/25/2012 Distance: 187.8 Ft

Obs: Break in Connection

Comments:



Date: 09/25/2012 Distance: 192.9 Ft

Obs: Plugged Connection

Comments:



Date: 09/25/2012 Distance: 272.9 Ft

Obs: Plugged Connection

Comments:



Date: 09/25/2012
Distance: 283.6 Ft
Obs: Crack longitudinal

Comments:



Date: 09/25/2012
Distance: 283.8 Ft
Obs: Intruding Lateral



X

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Upstream Setup		
Street Name Fairway Dr	City Name Holtville	Weather Dry			
Location		From Manhole 24 To Manhole 25	To Manhole 25		

Date: 09/25/2012 Distance: 283.8 Ft

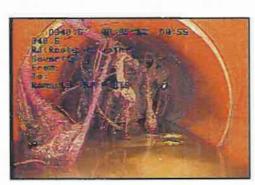
Obs: Break in Connection

Comments:



Date: 09/25/2012 Distance: 348.6 Ft Obs: Roots at joint

Comments: TAP ROOTS



Date: 09/25/2012 Distance: 350.1 Ft

Obs: Roots from lateral

Comments:

LARGE TAP ROOTS



Date: 09/25/2012 Distance: 350.1 Ft

Obs: Break in Connection



Contract		V	ideo	Set	tup 26	
Operator NJP		Van	Ref 10	Surveyed	On 09/25/20)12
		City Holts	/ille			
of pipes and things		Weath	er Dry			
	Sched lengt	h Ft	From25)epth	Ft
Siz	e8 by	ins	To 24)epth	F
Joi	nt Spacing	Ft	Direction Dov	vn		
Y	ear laid		Pre-clean N	Last Clear	red	
			Structural	Service	Construc	tion
			Miscellaneous	Hydraulic		
	Operator NJP of pipes and things Siz Join	Operator NJP of pipes and things Sched lengt	Operator NJP Van City Holts of pipes and things Weather Sched length Ft Size 8 by ins Joint Spacing Ft	Operator NJP Van Ref 10 City Holtville of pipes and things Weather Dry Sched length Ft From 25 Size 8 by ins To 24 Joint Spacing Ft Direction Dov Year laid Pre-clean N Structural	Operator NJP Van Ref 10 Surveyed of City Holtville of pipes and things Weather Dry Sched length Ft From 25 City Holtville Size 8 by ins To 24 City Holtville Joint Spacing Ft Direction Down Pre-clean N Last Clear Structural Service	Operator NJP Van Ref 10 Surveyed On 09/25/20 City Holtville of pipes and things Weather Dry Sched length Ft From 25 Depth Size 8 by ins To 24 Depth Joint Spacing Ft Direction Down Year laid Pre-clean N Last Cleaned Structural Service Construction

Video	Count	CD	Code	-	Sev	Fr	То	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		MH	Manhole/Node					25
-	0.0		WL	Water level				3	
	29.8		RJ	Roots at joint	L				LARGE TAP ROOT
	31.3		CP	Plugged Connection		03			
	31.9		GO	General observation					POSSIBLE BREAK IN CONNECTION
	31.9		GO	General observation					REACHED OVERLAP POINT
	31.9		SA	Survey abandoned	Ī		\Box	1	

31.9 Ft Total Length Surveyed

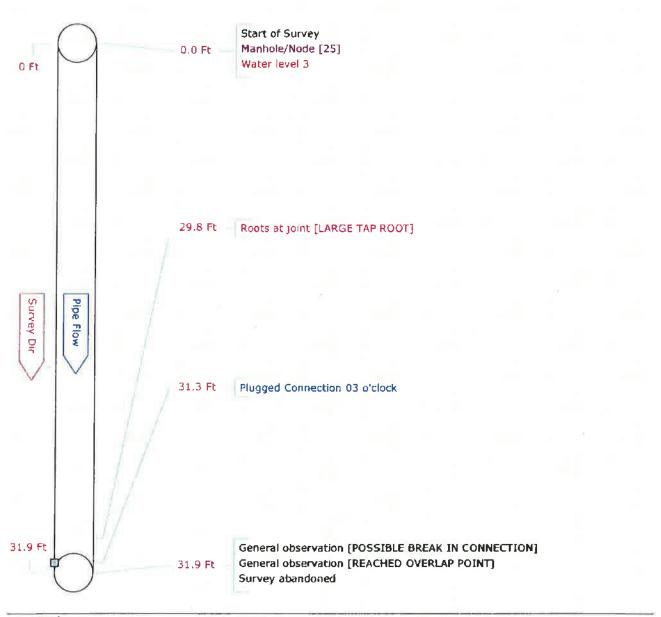
Scores

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 100	Mean Defect 50	Peak 100	Mean Pipe 3.1



Miscellaneous

Hydraulic





Location note

PipeLogix Inc. Phone: 866-299-3150

Fax: 760-406-6023

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for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	12 Direction Downstream Setup 2				
Street Name Anderholt Rd	City Name Hoftville	We	Weather Dry				
Location		From Manhole 25	To Manhole 24				

Date: 09/25/2012 Distance: 29.8 Ft Obs: Roots at joint

Comments:

LARGE TAP ROOT



Date: 09/25/2012 Distance: 31.3 Ft

Obs: Plugged Connection



Work Order	Contract	Vic	deo	Setu	p 21
Facility	Operator NJP	Van	Ref 10	Surveyed O	n 09/25/2012
Street Name Anderholt Rd Location type Surface Survey purpose Random survey	of pipes and things	City Holtvi Weathe			
Pipe Use Sanitary	Sched len	gth Ft	From 28	De	pth Ft
Shape Circular Material Vitrified clay Lining	Size 8 by Joint Spacing Year laid	ins Ft	To 25 Direction Dow		opth Ft
General note Location note			Structural Miscellaneous	Service Hydraulic	Constructiona

Video	Count	CD	Code	200	Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		MH	Manhole/Node					26
	0.0		WL	Water level				3	
	10.4		DEG	Debris (Grease)	S				
	20.4		CP	Plugged Connection		03			
	63.3		СВ	Break in Connection		03			
	92.7		CP	Plugged Connection		03			
	111.0		CL	Crack longitudinal	M	02			
	112.9		СВ	Break in Connection		02			
	146.5		DEG	Debris (Grease)	S				CONTINUING
	158.9		RJ	Roots at joint	S				
W. CO.	166.3		CR	Roots from lateral	M	03			
II de la constante	166.3		CN	Service Connection		03			
	217.5		CB	Break in Connection		03			
	217.5		CRA	Roots around Lateral	S	03			
	245.1		CP	Plugged Connection		03			
A) - VIII	293.0	T	DEG	Debris (Grease)	S				CONTINUING
	324.2		CP	Plugged Connection		03			
	355.3		СВ	Break in Connection		02			
	355.3		CRA	Roots around Lateral	M	03			
	355.3		RJ	Roots at joint	L				TAP ROOTS
	361.5		МН	Manhole/Node					25
	361.5		FH	Finish of Surveys					

361.5 Ft Total Length Surveyed

Scores

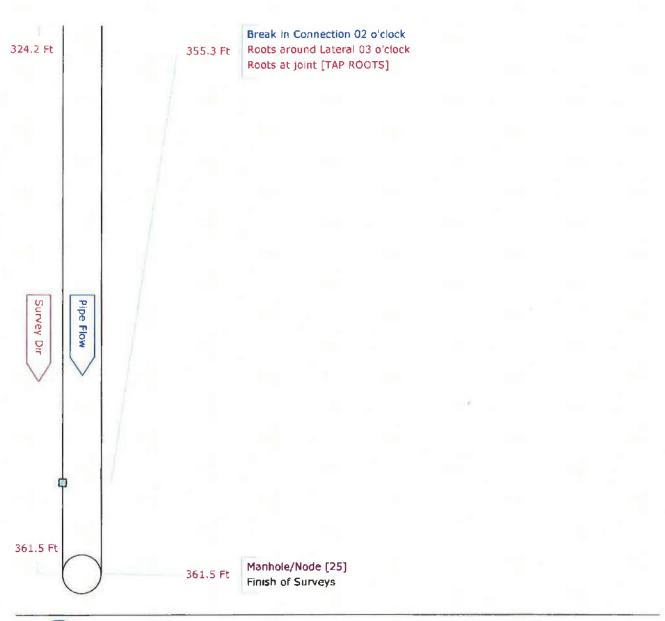
Structural:	Total 150	Mean Defect 16.7	Peak 150	Mean Pipe 0.4
Service:	Total 395	Mean Defect 43.9	Peak 150	Mean Pipe 1.1



0 Ft	0.0 Ft	Start of Survey Manhole/Node [26] Water level 3
	10.4 Ft	Debris (Grease)
4	20.4 Ft	Plugged Connection 03 o'clock
	63.3 Ft	Break in Connection 03 o'clock
	92.7 Ft	Plugged Connection 03 o'clock
	111.0 Ft	Crack longitudinal 02 o'clock
C C	112.9 Ft	Break in Connection 02 o'clock
Pipe Flow O Survey Dir	146.5 Ft	Debris (Grease) [CONTINUING]
	158.9 Ft	Roots at joint
9	166.3 Ft	Roots from lateral 03 o'clock Service Connection 03 o'clock
4	217.5 Ft	Break in Connection 03 o'clock Roots around Lateral 03 o'clock
	245.1 Ft	Plugged Connection 03 o'clock
324. 2 F t	293.0 Ft	Debris (Grease) [CONTINUING]
	324.2 Ft	Plugged Connection 03 o'clock



Pipe Graphic Report of PLR 2	6 X	for Bureau Veri	tas NA
Work Order Facility	Contract Operator NJP	Video Van Ref 10	Setup 21 Surveyed On 09/25/2012
Street Name Anderholt Rd Location type Surface	City	Holtville	
Survey purpose Random survey of	pipes and things	Weather	Dry
Pipe Use Sanitary	Schedule length	Ft From 26	Depth Ft
Shape Circular Material Viutfied clay	Size 8 by Joint spacing	ins To 25 Ft Direction Do	Depth Ft
Elning	Year laid	Pre-clean N	Last cleaned
General note		Structural	Service Constructional
Location note		Miscellaneous	Hydraulic





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for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Downstream	Setup 21
Street Name Anderholt Rd	City Name Holtville	Weather Dry		
Location		From Manhole 26	To Manhole 25	

Date: 09/25/2012
Distance: 10.4 Ft
Obs: Debris (Grease)

Comments:



Date: 09/25/2012 Distance: 20.4 Ft

Obs: Plugged Connection

Comments:



Date: 09/25/2012 Distance: 63.3 Ft

Obs: Break in Connection

Comments:



Date: 09/25/2012 Distance: 92.7 Ft

Obs: Plugged Connection

Comments:



Date: 09/25/2012
Distance: 111.0 Ft
Obs: Crack longitudinal

Comments:



Date: 09/25/2012 Distance: 112.9 Ft

Obs: Break in Connection



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for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Downstream	Setup 21
Street Name Anderholt Rd	City Name Holtville	Weather Dry		
Location		From Manhole 26	To Manhole 25	

Date: 09/25/2012

Distance: 158.9 Ft

Obs: Roots at joint

Comments:

0158.9 Gresriz 18:43 158.9 Richesta di Petro Severito S From To: Remorks Date: 09/25/2012
Distance: 166.3 Ft
Obs: Roots from lateral

Comments:



Date: 09/25/2012 Distance: 166.3 Ft

Obs: Service Connection

Comments:



Date: 09/25/2012 Distance: 217.5 Ft

Obs: Break in Connection

Comments:



Date: 09/25/2012 Distance: 217.5 Ft Obs: Roots around

Lateral

Comments:



Date: 09/25/2012
Distance: 245.1 Ft
Obs: Plugged Connection



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for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Downstream	Setup 21
Street Name Anderholt Rd	City Name Holtville	Weather Dry		
Location		From Manhole 26	To Manhole 25	

Date: 09/25/2012 Distance: 293.0 Ft Obs: Debris (Grease)

CONTINUING



Date: 09/25/2012
Distance: 324.2 Ft
Obs: Plugged Connection

Comments:



Date: 09/25/2012 Distance: 355.3 Ft

Obs: Break in Connection

Comments:



Date: 09/25/2012
Distance: 355.3 Ft
Obs: Roots around
Lateral

Comments:



Date: 09/25/2012 Distance: 355.3 Ft Obs: Roots at joint

Comments: TAP ROOTS



Х

for Bureau Veritas NA

Contract			Vid	eo	Set	up 20	
Operator NJP			Van R	tef 10	Surveyed On 09/25/201		012
		City	Holtvill	le			
of pipes and things		We	ather	Dry			
	Sched length	1	Ft	From 26	7	epth	Ft
Siz	e 8 by	ins		To 27		epth	Ft
Joi	nt Spacing	Fŧ		Direction Up			
Υ.	ear laid			Pre-clean N	Last Clean	ed	
				Structural	Service	Constru	ctiona
				Miscellaneous	Hydraulic		
	Operator NJP of pipes and things Siz Join	Operator NJP of pipes and things Sched length	Operator NJP City to pipes and things Sched length Size 8 by Ins Joint Spacing Ft	Operator NJP Van R City Holtvill of pipes and things Weather Sched length Ft Size 8 by Ins Joint Spacing Ft	Operator NJP Van Ref 10 City Holtville Of pipes and things Weather Dry Sched length Ft From 26 Size 8 by ins To 27 Joint Spacing Ft Direction Up Year laid Pre-clean N Structural	Operator NJP Van Ref 10 Surveyed 6 City Holtville Sched length Ft From 26 Company Co	Operator NJP Van Ref 10 Surveyed On 09/25/2 City Holtville Of pipes and things Weather Dry Sched length Ft From 26 Depth Size 8 by Ins To 27 Depth Joint Spacing Ft Direction Up Year laid Pre-clean N Last Cleaned Structural Service Constru

Video	Count	CD C	ode		Sev	Fr	To	Value	Remarks
	0.0		5 T	Start of Survey					
	0.0	P	ИН	Manhote/Node					26
	0.0	١	٧L	Water level				3	
	14.7		DEG	Debris (Grease)	s				
	17.6	(CL .	Crack longitudinal	S	10			
	18.2		CB	Break in Connection		10			
	54.5	(CP.	Plugged Connection		10			
	61.3		DEG	Debris (Grease)	S				CONTINUING
	105.6	(CB	Break in Connection		10			
	128.2		CB	Break in Connection		10			
	164.2	. (СВ	Break in Connection		10			
	164.3	F	₹J	Roots at joint	M				_
	207.4	C	CP	Plugged Connection		10			
	281.1	(CP	Plugged Connection		09			
	281.9	C	CL	Crack longitudinal	S	10			
	282.4	C	M	Cracks multiple	S	12	12		
	282.8	(В	Break in Connection		10			
	303.1	C	CL	Crack longitudinal	S	10			
	303.5	C	В	Break in Connection		10			
	362.3	N.	ин	Manhole/Node					27
	362.3	F	Н	Finish of Surveys					

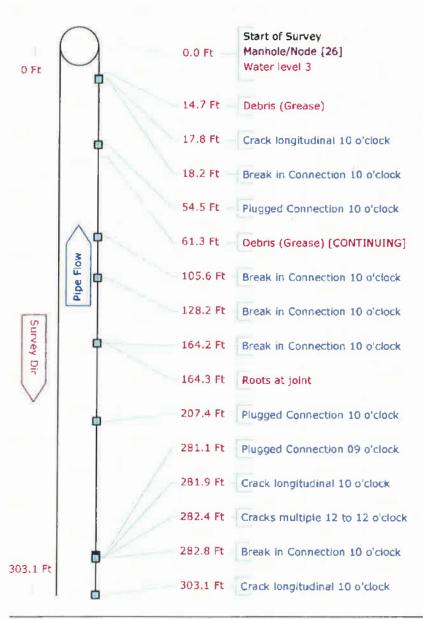
362.3 Ft Total Length Surveyed

Scores

Structural:	Total 400	Mean Defect 30.8	Peak 100	Mean Pipe 1.1
Service:	Total 175	Mean Defect 43.8	Peak 75	Mean Pipe 0.5



Work Orde Facility	or	Contract Operator NJP	Vide Va	n Ref 10		20 09/25/2012
Street Nam Location t Surface Survey pu	уре	City of pipes and things	Halt		Dry	
Pipe Use	Sanitary	Schedule length	Ft	From 26	Depth	Ft
Shape	Circuler	Size 8 by	ins	To 27	Depth	Ft
Material	Vitrified clay	Joint spacing	Ft	Direction Up	stream	
Lining		Year laid		Pre-clean N	Last cleaned	
General no	ote			Structural	Service Co	onstructional
Location n	ote			Miscellaneous	Hydraulic	

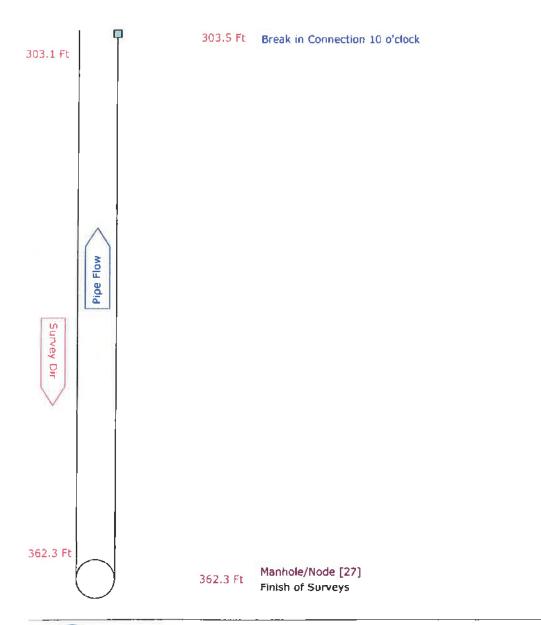




Pipe Graphic R	eport of PLR 27	X	for	Bureau Ver	itas NA	
Work Order Facility	Cont	ract perator NJP	Vlde	Ref 10	Setu Surveyed C	•
Street Name Location type	Anderholt Rd	City	Haltv		Surveyeu	MI 00/23/2012
Surface Survey purpose	Random survey of pipes	and things		Weather	Dry	
Pipe Use Sanitai	у	Schedule length	Ft	From 26	D	epth Ft
Shape Circula	г	Size 6 by	ins	To 27	D	epth Ft
Material Vitriflet	l clay	Joint spacing	Ft	Direction U	lpstream	
Lining		Year laid		Pre-clean N	Last cleane	d
General note				Structural	Service	Constructional

Hydraulic

Miscellaneous





Location note

X

for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Upstream	Setup 20
Street Name Anderholt Rd	City Name Holtville	Weather Dry		
Location		From Manhole 26	To Manhole 27	

Date: 09/25/2012 Distance: 14.7 Ft

Obs: Debris (Grease)

Comments:

14.7 DEG (Operis (Greage)) Severity:S From: To: Remarks:

Date: 09/25/2012

Distance: 17.8 Ft

Obs: Crack longitudinal

Comments:



Date: 09/25/2012 Distance: 18.2 Ft

Obs: Break in Connection

Comments:

Oute p 09/25/12 09/32
LE 2
Ob Break on temperatural
Seventral
From-10
Tel
Summars

Date: 09/25/2012 Distance: 54.5 Ft

Obs: Plugged Connection

Comments:



Date: 09/25/2012 Distance: 61.3 Ft Obs: Debris (Grease)

Comments: CONTINUING



Date: 09/25/2012 Distance: 105.6 Ft

Obs: Break in Connection



CCTV pictures of 27 X

for Bureau Veritas NA

Video	Surveyed On 09/25/2012	Direction Upstream	Setup 20
City Name Holtville	We	ather Dry	
	From Manhole 26	To Manhole 27	
		City Name Holtville We	City Name Holtville Weather Dry

Date: 09/25/2012

Distance: 128.2 Ft

Obs: Break in Connection

Comments:



Date: 09/25/2012

Distance: 164.2 Ft

Obs: Break in Connection

Comments:



Date: 09/25/2012

Distance: 164.3 Ft Obs: Roots at joint

Comments:



Date: 09/25/2012

Distance: 207.4 Ft

Obs: Plugged Connection

Comments:



Date: 09/25/2012 Distance: 281.1 Ft

Obs: Plugged Connection

Comments:



Date: 09/25/2012 Distance: 281.9 Ft Obs: Crack longitudinal



X for Bureau Veritas NA

Work Order	Video	Surveyed On 09/25/2012	Direction Upstream	Setup 20
Street Name Anderholt Rd	City Name Holtville	We	ather Dry	
Location		From Manhole 26	To Manhole 27	

Date: 09/25/2012 Distance: 282.4 Ft Obs: Cracks multiple

Comments:

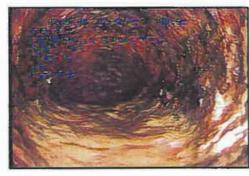
B282 4' 09-25-12- US-50 282 4 CM CHARLE MAJERO & Soverity S From 12 10:12 Remarks

Comments:

Date: 09/25/2012

Distance: 282.8 Ft

Obs: Break in Connection



Date: 09/25/2012 Distance: 303.1 Ft

Obs: Crack longitudinal

Comments:



Date: 09/25/2012 Distance: 303.5 Ft

Obs: Break in Connection



Α

for Bureau Veritas NA

Work	Order			Contract					Vide	0		5	atup 35		
F	acility			Operator I	ATh		Van Ref 10					Surveyed On 09/27/2012			
Str	eet Name	Bart	era Wo	rth Rd			City	Но	ltville	•					
Loca	tion type														
	Surface														
Survey	purpose	Rand	om sun	ey of pipes and thi	ngs		٧	eat	her	Dry					
Pipe	Use Sanit	lary			Sche	d length		F	t	From	28		Depth	Ft	
Sh	nape Circu	ılar			Size 8	by	ine		- 1	To) 5		Depth	Ft	
Mate	rial Vitrifi	ed cla	ıy		Joint Spa	cing	Ft		- 1	Direc	tion Dow	'n			
Lit	ning				Year lai	d				P18-C	lean N	Last Cle	aned		
Gener	al note Ci	reated	survey	. Could not attempt	line.					Struct	urat	Service	Consti	ructional	
Locatio	on note									Misce	llaneous	Hydraulic			
Video	Count	CD	Code				Sev	Fr	То	Value	Remark	s			
	0.0		ST	Start of Survey											
	0.0		MH	Manhole/Node		97					28				
	0.0		WL	Water level						0		24-27			

0.0 Ft **Total Length Surveyed**

General observation

General observation

GO

GO

o	_	_	_	_	_	
⋗	C	o	к	В	5	

0.0 0.0

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe

US AND DS MH'S SURCHARGED CO.

LINES POSSIBLY SURCHARGED DUE ..



for Bureau Veritas NA

Work Order	Contract		Vic	ieo	Set	up 37	
Facility	Operator NJP		Van I	Ref 10	Surveyed (On 09/27/20	12
Street Name Barbara W Location type	/onh Rd	ı	City Holtvi	lle			
Surface							
Survey purpose Random su	rvey of pipes and things		Weathe	r Dry			
Pipe Use Sanitary	Sc	hed length	Ft	From 29	C	Depth	Ft
Shape Circular	Size 8	by	ins	To 28		Depth	Ft
Material Vitrified day	Joint S	pacing	Ft	Direction Dow	'n		
Lining	Year	aid		Pre-clean N	Last Clean	ied	
General note Created surve	ey. Could not attempt line.			Structural	Service	Construc	tional
Location note	,			Miscellaneous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey		T			
	0.0		MH	Manhole/Node			<u>.</u>		29
	0.0		WL	Water level				0	
	0.0		GO	General observation		T^{-}			US MH NOT FOUND
	0.0		GO	General observation	_ l				DS MH SURCHARGED, COULD NOT A
	0.0		GO	General observation			<u> </u>		DS MH POSSIBLY SURCHARGED DUE.

0.0 Ft Total Length Surveyed

Scores

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Α

for Bureau Veritas NA

Work Order	Contract		Vic	deo	Set	up 38	
Facility	Operator N	JP	Van I	Surveyed On 09/27/2012			
Street Name Barbara	Worth Rd		City Holtvi	lle			_
Location type							
Surface							
Survey purpose Random	survey of pipes and thin	gs	Weathe	r Dry			
Pipe Use Sanitary		Sched length	n Ft	From 30	ſ	Depth	Ft
Shape Circular		Size 8 by	ins	To 29	1	Depth	Ft
Material Vitrifled clay		Joint Spacing	Ft	Direction Dov	vn		
Lining		Year laid		Pre-clean N	Last Clear	1ed	
General note Created su	rvey. Could not attempt I	ine.		Structural	Service	Constru	ictiona
Location note				Miscellaneous	Hydraulic		
Video Count CD Co	ode		Sev Fr T	o Value Remark	(\$		
00 8	Y Start of Suprey		-T	1		••	

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
<u> </u>	0.0		MH	Manhole/Node					30
	0.0		WL	Water level				0	
	0.0		GO	General observation					US MH IN PRIVATE PROPERTY, NO
	0.0		GO	General observation					DS MH NOT FOUND, COULD NOT AT

0.0 Ft Total Length Surveyed

Scores

					_
Structural:	Total	Mean Defect	Peak	Mean Pipe	
Service:	Total	Mean Defect	Peak	Mean Pipe	



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for Bureau Veritas NA

avaidi	LOPOIL	0111	-11	,	•				-	4 7011	1117			
Work	Order		<u> </u>	Contract			•		Vide	90		5	Betup 39	
Fa	cility			Operator I	NJP			Va	n R	ef 10		Surveye	d On 09/27/	2012
Str	eet Name	Bart	ara Wo	rth Rd			City	Но	Itville	=				
Loca	tion type	i												
	Surface	ı												
Survey	purpose	Rand	iom surv	ey of pipes and thi	ings		W	/eet	her	Dry				
Plpe	Use Sani	tary			\$cl	ned length	1	F	t	From	31		Depth	Ft
\$h	ape Circu	ılar			Size 8	by	ins			To	30		Depth	Ft
Mate	rial Vitrif	ied de	ıy		Joint Sp	acing	Ft			Direc	tion Dov	vn .		
Lir	ing				Year la	aid				Pre-c	lean N	Last Cle	aned	
Gener	al note C	reated	survey.	. Could not attempt	line.					Struck	ural	Service	Constr	uctiona
Locatio				•						Misce	llaneous	Hydraulic		
Video	Count	CD	Code				Sev	Fr	To	Value	Remark	(S		
	0.0		ST	Start of Survey		_								
_	0.0		МН	Manhole/Node							31			
	0.0		WL.	Water level					Π	0				
	0.0		GO	General observat	ion						US MH	NOT FOUND)	
	0.0		GO	General observat	ion		T	Ī			DS MH I	N PRIVATE	PROPERTY	. NO

0.0 Ft Total Length Surveyed

Scores

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Contract			Vid	90	Set	up 29	
Operator NJP			Van R	ef 10	Surveyed (o 09/26/2	2012
r		City	Holtvill	ө			
of pipes and things		We	ather	Dry			
Sche	d length		Ft	From 32	Ω	epth	Ft
Size 6	by	ins		To 31		epth	Ft
Joint Spa	cing	Ft		Direction Dow	'n		
Year laid	đ			Pre-clean N	Last Clear	ed	
				Structural	Service	Constru	uctional
				Miscellaneous	Hydraulic		
	Operator NJP of pipes and things Sche Size 6 Joint Space	Operator NJP of pipes and things Sched length	Operator NJP City of pipes and things Sched length Size 6 by ins Joint Spacing Ft	Operator NJP Van R City Holtvill of pipes and things Weather Sched length Ft Size 6 by ins Joint Spacing Ft	Operator NJP Van Ref 10 City Holtville of pipes and things Weather Dry Sched length Ft From 32 Size 6 by ins To 31 Joint Spacing Ft Direction Down Year laid Pre-clean N Structural	Operator NJP Van Ref 10 Surveyed Comments Weather Dry Sched length Ft From 32 Direction Down Year laid Pre-clean N Last Clean Structural Service	Operator NJP Van Ref 10 Surveyed On 09/26/2 City Holtville of pipes and things Weather Dry Sched length Ft From 32 Depth Size 6 by ins To 31 Depth Joint Spacing Ft Direction Down Year laid Pre-clean N Last Cleaned Structural Service Constru

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
_	0.0		MH	Manhole/Node					32
	0.0		WL	Water level				5	
	2.1		RJ	Roots at joint	L				
	50.1		RJ	Roots at joint	S				
	50.1		CN	Service Connection		12			
	99.7		RJ	Roots at joint	S				
	105.9		RJ	Roots at joint	S				
	118.1		RJ	Roots at joint	S		Γ		
	124.2		RJ	Roots at joint	S				CONTINUING
	144.2	T i	CN	Service Connection		01			
	170.8		DEG	Debris (Grease)	S			<u> </u>	
	231,3		CN	Service Connection		12			
	297.2		DS	Begin Pipe Sag					
	307.0		DF	End pipe sag			Ĺ		
	328.9		CN	Service Connection	ļ <u>.</u>	12	Ì		
	329.9		LL	Bend in pipe left					
	330.4		GO	General observation					BEND TOO TIGHT FOR TRACTOR
	330.5		GO	General observation					DS MH NOT FOUND. NO ACCESS FO
	330.6		SA	Survey abandoned					

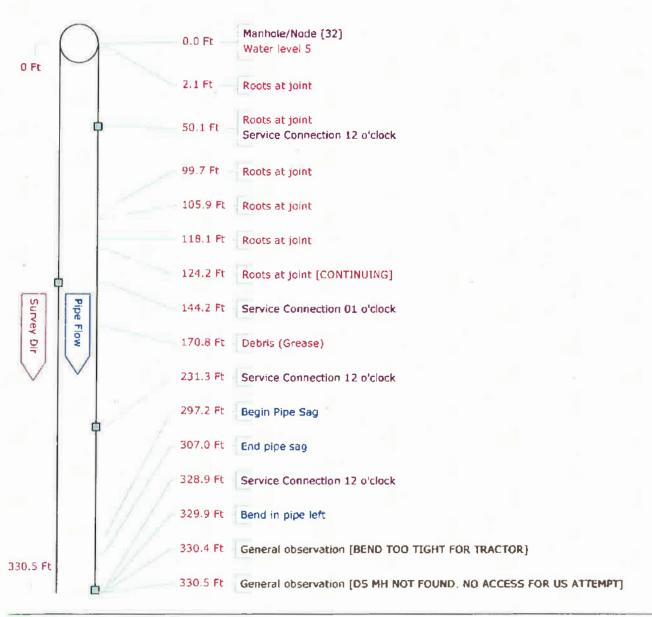
330.6 Ft Total Length Surveyed

Scores

Structur	al:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Servi	ce:	Total 275	Mean Defect 34.4	Peak 100	Mean Pipe 0.8



Work Order Facility	C	ontract Operator	NJP	Video Var	n Ref 10	Setup Surveyed On	29 09/26/2012
Street Name Location type Surface Survey purpose	Country Club Dr Random survey of p	lpes and thing	City	Holtv	9050F #5010F)ry	
Pipe Use Sanitar Shape Circula Material Vitrified Lining	r	Size	edule length s 6 by nt spacing ar laid	Ft ins Ft	From 32 To 31 Direction Down	Dept Dept wnstream Last cleaned	
General note Location note		*			Structural Miscellaneous	Service (Hydraulic	Constructional





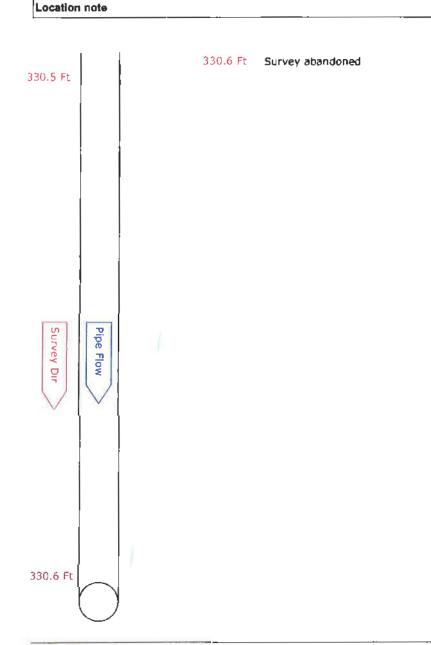
Service

Hydraulic

Structural

Miscellaneous

Constructional





General note

CCTV pictures of 32

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 Work Order
 Video
 Surveyed On 09/26/2012
 Direction Downstream
 Setup 29

 Street Name Country Club Dr
 City Name Holtville
 Weather Dry

 Location
 From Manhole 32
 To Manhole 31

Date: 09/26/2012 Distance: 2.1 Ft Obs: Roots at joint

Comments:



Date: 09/26/2012 Distance: 50.1 Ft Obs: Roots at joint

Comments:



Date: 09/26/2012 Distance: 50.1 Ft

Obs: Service Connection

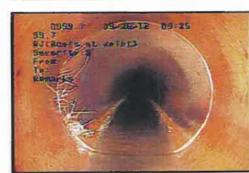
Comments:



Date: 09/26/2012 Distance: 99.7 Ft

Obs: Roots at joint

Comments:



Date: 09/26/2012 Distance: 105.9 Ft Obs: Roots at joint

Comments:



Date: 09/26/2012 Distance: 118.1 Ft Obs: Roots at joint

Comments:



CCTV pictures of 32

for Bureau Veritas NA X

Direction Downstream **Work Order** Video Surveyed On 09/26/2012 Setup 29 Street Name Country Club Dr Weather Dry City Name Holtville From Manhole 32 To Manhole 31 Location

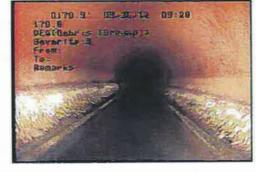
Date: 09/26/2012 Distance: 124.2 Ft Obs: Roots at joint

Comments: CONTINUING



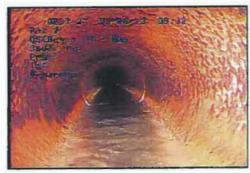
Date: 09/26/2012 Distance: 170.8 Ft Obs: Debris (Grease)

Comments:



Date: 09/26/2012 Distance: 297.2 Ft Obs: Begin Pipe Sag

Comments:



Date: 09/26/2012 Distance: 144.2 Ft Obs: Service Connection

Comments:



Date: 09/26/2012 Distance: 231.3 Ft

Obs: Service Connection

Comments:



Date: 09/26/2012 Distance: 328.9 Ft Obs: Service Connection

Comments:



CCTV pictures of 32

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for Bureau Veritas NA

Work Order	Video	Surveyed On 09/26/2012 Direction Downstream Setup			
Street Name Country Club Dr	City Name Holtville	Weather Dry			
Location		From Manhole 32 To Manhole 31			

Date: 09/26/2012
Distance: 329.9 Ft
Obs: Bend in pipe left

Comments:



Tabular Report of PLR 33

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for Bureau Veritas NA

unujai	Heboir	0111	LIV OC	,	1				oat		WO 117			
Work	Order			Contract	_			,	Vide	90	••	8	Setup 36	
Fa	acility			Operator I	NJP			Va	n Re	ef 10		Surveyed On 09/27/2012		
Str	eet Name	a Bart	ara Wo	rth Rd			City	, Ha	Itville	,				
Loca	tion type	9												
	Surface	3												
Survey	purpose	Rand	dom surv	ey of pipes and thi	ings		W	Veat	her	Dry				
Pipe	Use Sani	itary			Sch	ed length	h	F	t	From	33	-	Depth	Ft
Sh	ape Circi	ular			Size 8	by	ins	5	1	To	28		Depth	Ft
Mate	rial Vitrif	fied cla	ау		Joint Sp	acing	Ft		- 1	Direc	tion Dow	/n		
Lir	ning				Year la	id				Pre-c	lean N	Last Cie	eaned	
Gener	al note C	reated	survey	. Could not attempt	line.				1	Struct	tural	Service	Const	ructiona
Locatio				,						Misce	llaneous	Hydraulic		
Video	Count	CD	Code				Sev	Fr	То	Value	Remark	(8		
	0.0		ST	Start of Survey										
	0.0		MH	Manhole/Node							33			
	0.0		WL	Water level						0				
	0.0		GO	General observat	ion		Ï	İ			US MH I	NOT FOUND	D, DS MH SU	IRCHA.
	0.0		GO	General observat	on		İ	İ	<u> </u>		LINE PO	SSIBLY SU	RCHARGED	DUE
_						_			-					

0.0 Ft Total Length Surveyed

Scores

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Tabular Report of PLR 06

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for Bureau Veritas NA

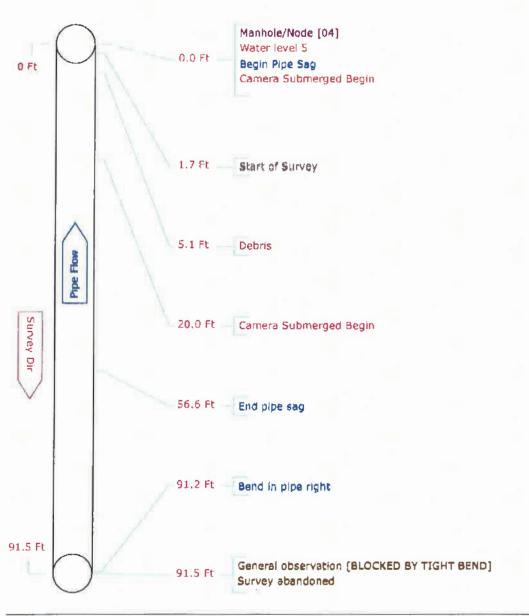
Work Order	Contract	Vi	deo	Set	up 42
Facility	Operator NJP	Van	Ref 10	Surveyed (On 10/25/2012
Street Name Barbara Worth	Rd	City Holt	rille		
Location type Surface					
Survey purpose Random survey	of pipes and things	Weath	er Dry		
Pipe Use Senitary	Sched	length Ft	From04		Depth F
Shape Circular	Size 10	by ins	To 06	C	epth F
Material Polyvinly chloride	Joint Spacin	ng Ft	Direction Up		
Lining	Year laid		Pre-clean N	Last Clear	ed
General note			Structural	Service	Construction
Location note			Miscellaneous	Hydraulic	
lides Court CD Code		Con En 1	To Volus Romari		

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		MH	Manhole/Node					04
	0.0		WL	Water level			Ī	5	
	0.0		DS	Begin Pipe Sag					
	0.0		CUB	Camera Submerged Begin					
	1.7		9 T	Start of Survey			Ī		
	5,1		DE	Debris	L		ļ	İ	L
Ī	20.0		CUB	Camera Submerged Begin					
<u> </u>	56.6		DF	End pipe sag					
[91.2		LR	Send in pipe right					
ĺ	91.5		60	General observation					BLOCKED BY TIGHT BEND
	91.5		SA	Survey abandoned				'	

91.5 Ft **Total Length Surveyed**

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe







Tabular Report of PLR 07

for Bureau Veritas NA

abular Report of PLR 07		X	for	Bureau	ı Veritas NA			
Work Order	Contract			Vide	00	Set	up 43	
Facility	Operator	NJP		Van R	af 10	Surveyed (On 10/25/2	2012
Street Name Country Club Dr			Cit	ty Holtville			-	
Location type								
Surface								
Survey purpose Random survey of	of pipes and th	ings		Weather	Dry			
Pipe Use Sanitary		Sched len	gth	Ft	From 06	ſ	Depth	Ft
Shape Circular		Size 10 by	le	18	To 07		Depth	Ft
Material Vitrified clay		Joint Spacing	F	t i	Direction Up			
Lining		Year laid			Pre-clean N	Last Clear	ned	
General note					Structural	Service	Constru	uctiona
Location note				Ì	Miscollandous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		MH	Manhole/Node					06
	0.0		WL	Water level]			5	
	75.7		DS	Begin Pipe Sag					
	105.3		CUB	Camera Submerged Begin			<u> </u>		
	174.9		CUE	Camera Submerged End					
	197.4		DF	End pipe sag					8-8" Depth Change
	268.4		МН	Manhole/Node					07
	268.4		βΗ	Finish of Burveys					

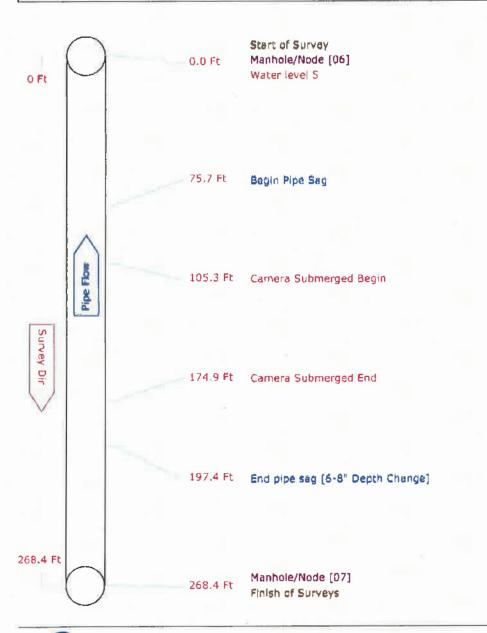
268.4 Ft Total Length Surveyed

S	c	O	re	

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Work Orde Facility		Contract Operator NJ	Р	•	deo Van Ref	10		Set Surveyed	•	43 10/25/2	012
Street Nam Location ty Surface Survey pu	/pe	of pipes and things	City	Н	oltville V	Veath	er C)ry			
Pipe Use	Sanitary	Schedu	ile length	Ft	Froi	n 06	3		Depti	1	Ft
Shape	Circular	Size 1	0 by	ins	To	0	7	1	Depth	1	Ft
Material	Vitrified clay	Joint s	pacing	Ft	Dire	ction	Ups	stream			
Lining		Year la	ld		Pre-	clean	N	Last clean	ed		
General no	te				Stru	ctural		Service	C	onstruct	ional
Location n	ote				Mis	ellan	30UB	Hydraulic			





Tabular Report of PLR 07

X

for Bureau Veritas NA

Work Order	Contract			VId	60	Set	up 44	
Facility	Operator NJP		Van Ref 10			Surveyed On 10/25/2012		
Street Name Country Club D	ır		City	Holtviii	le			
Location type								
Surface						*		
Survey purpose Random survey	of pipes and things		We	ather	Dry	1 5 1		
Pipe Use Senitary	Sc	hed length		Ft	From07	D	epth	Ft
Shape Circular	Sixe 10	by	ins		To 06		epth	Ft
Material Vitrified clay	Joint S	pacing	Ft		Direction Dow	rn		
Lining	Year I	aid			Pre-clean N	Last Clear	bed	
General note					Structural	Service	Constru	ctional
Location note					Miscellaneaus	Hydraulic		

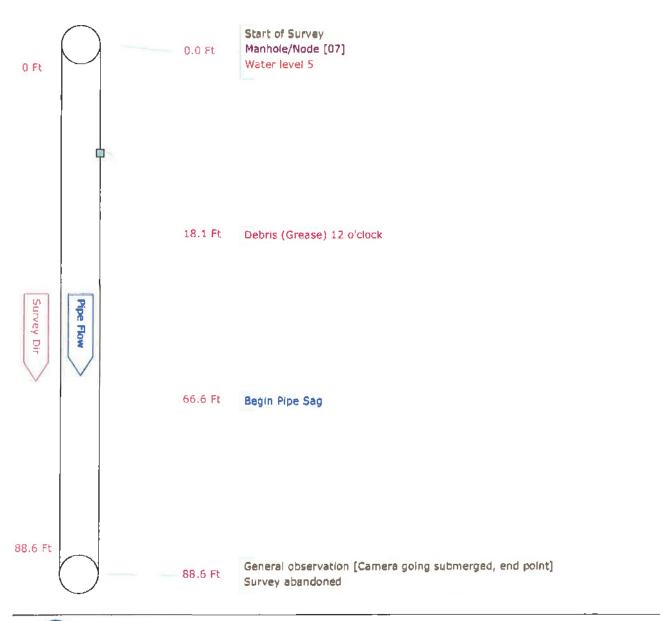
Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
_	0.0		МН	Manhole/Node					07
	0.0		WL	Water level				5	
	18.1		DEG	Debrîs (Grease)	S	12			
	66.6		DS	Begin Pipe Sag	l l				
	88.6		gg.	General observation				ı	Camera going submerged, and p
	88.6		BA	Survey abandoned					

88.6 Ft Total Length Surveyed

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Work Orde Facility)r	Contract Operator NJP					Video Van Ref 10				Se Surveyed	tup I On	44 10/25/2	012
Street Nam	nø	Country Club Dr			City		Holtviii	е		·				
Location to Surface Survey pu		Random survey of	pipes and thing	s				Wa	anth e	r D	ry			
Pipe Use	Sanitary		Sch	elube	length		Ft	From	07			Depth	<u> </u>	Ft
Shape	Circular		Size	10	by	ins		To	06			Depth	1	Ft
Material	Vitrifled	clay	Joid	nt spa	cing	Ft		Directi	ion	Dow	nstream.			
Lining			Yea	ır laid				Pre-cle	an	N	Last clear	ber		
General no	ote	<u></u>	· · · · · · · · · · · · · · · · · · ·					Structu	ıral		Service	С	Constructi	ional
Location n	ote							Miscell	lanec	auc	Hydraulic			





PipeLogix Inc. Phone: 866-299-3150

Fax: 760-406-6023

Work Order	Contract	VI	dec	Set	up 45	
Facility	Operator NJP	Van	Ref 10	Surveyed On 10/25/2012		
Street Name Barbara Wor	th Dr	City Holtv	ille			
Location type						
Surface						
Survey purpose Random surv	ey of pipes and things	Weathe	r Dry			
Pipe Use Senitary	Sched le	ngth Ft	From 07		epth Ft	
Shape Circular	Size 8 by	ins	To 11	D	epth Ft	
Material Vitrified clay	Joint Spacing	Ft	Direction Up			
Lining	Year laid		Pre-clean N	Last Clean	ed	
General note			Structural	Service	Constructions	
Location note			Miscellandous	Hydraulic		

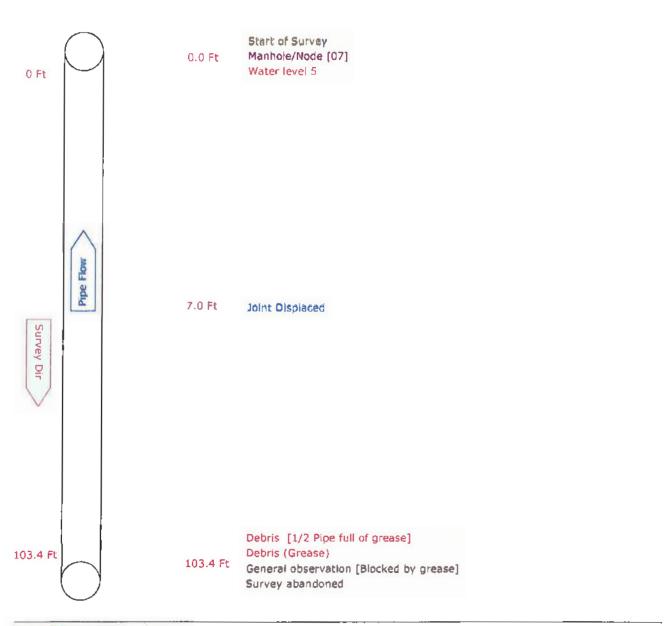
Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		97	Start of Survey					
	0.0		MH	Manhole/Node					07
	0.0		WL	Water level				5	
	7.0		JD	Joint Displaced	M				
	103.4		DE	Debris	L				1/2 Pipe full of grease
	103.4		DEG	Debris (Grease)	L				
	103.4		00	General observation					Blocked by grease
	103.4		SA	Survey abandoned					

103.4 Ft Total Length Surveyed

Scores	Structural:	Total	Mean Defect	Peak	Mean Pipe
	Service:	Total	Mean Defect	Peak	Mean Pipe



Work Order Facility		Contract Operator NJP					Video Van Ref 10				Surveye	etup 45 id On 10/2		
Street Nam	6	Barbara Worth Dr			City		Holt	ville				-	-	
Location ty	/pe													
Surface														
Survey pur	rpose	Random survey of pipes	and things					We	athe	r D	ry			
Pipe Use	Sanltary		Sche	dule	length		Ft	From	07			Depth	Ft	
Shape	Circular		Size	8	by	ins		To	11			Depth	Ft	
Material	Vitrified	clay	Joint	брас	cing	Ft		Direct	ion	Ups	tream			
Lining			Year	leid				Pre-cle	an	N	Last clea	ned		
General no	te							Structi	ıral		Service	Const	ructional	
Location no	ote							Miscell	ianeo	ua	Hydraulic			





Tabular Report of PLR 11

X

for Bureau Veritas NA

abdia report of Lit 17	^	101	Daioe	io volitos iva			
Work Order	Contract	_	Vic	leo	Setup 46		
Facility	Operator NJP		Van F	Surveyed On 10/25/2012			
Street Name Barbara Worth I	Dr	CI	ty Holtvil	le			
Location type							
Surface							
Survey purpose Random survey	of pipes and things		Weathe	r Dry			
Pipe Use Sanitary	Scho	ed length	Ft	From07		epth	Ft
Shape Circular	Size 8	by i	16	To 11	D	epth	Ft
Material Vitrified clay	Joint Spe	acing F	ŧ	Direction Up			
Lining	Year lai	ld		Pre-clean N	Last Clean	ed	
General note				Structural	Service	Construc	ctional
Location note				Miscellaneous	Hydraulic		

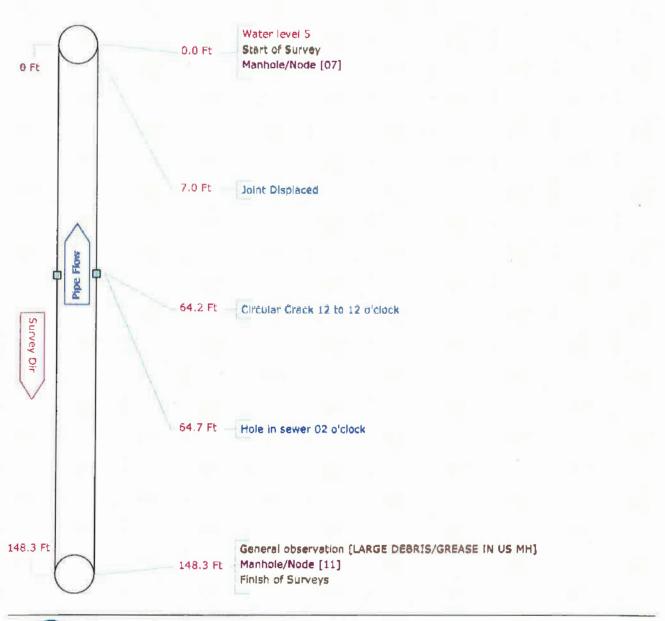
Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		WL	Water level				5	
	0.0		91	Start of Survey					
	0.0		MH	Manhgle/Node					07
	7.0		JD	Joint Displaced	M				
	64.2		CC	Circular Crack	S	12	12		
	64.7		Н	Hole in sewer	9	02			
	148.3		GO	General observation					LARGE DEBRIS/GREASE IN US MH
·	148.3		MH	Manhole/Node					11
	148.3		同时	Finish of Surveys					

148.3 Ft Total Length Surveyed

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Pipe Graphic Re	eport of PLR 11	X	for	Bureau Verita	as NA
Work Order Co Facility		act perator NJP	Video Var	Ref 10	Setup 48 Surveyed On 10/25/2012
Street Name Location type Surface Survey purpose	Barbara Worth Dr Random survey of pipes a	City and things	Holtv	BELLEVI SE	Ory
Pipe Use Senitary		Schedule length	Ft	From 07	Depth Ft
Shape Circular		Size 8 by	ins	To 11	Depth Ft
Material Vitrified	clay	Joint spacing	Ft	Direction Up	stream
Lining		Year laid		Pre-clean N	Last cleaned
General note				Structural	Service Constructional
Location note				Miscalianaous	Hydraulic





Tabular Report of PLR 08

X

for Bureau Veritas NA

Work Order	Contract		Vide	0	Set	up 47	
Facility	Operator NJP		Van Re	of 10	Surveyed ()n 10/25/2	2012
Street Name Barbara Wo	th Rd	City	Holtville				
Location type							
Surface							
Survey purpose Random surv	ey of pipes and things	W	eather	Dry			
Pipe Use Senitary	Sche	d length	Ft	From07	D	epth	Ff
Shape Circular	Size 8	by ins		To 08	D	epth	Fi
Material Vitrified clay	Joint Space	cing Ft		Direction Up			
Lining	Year laid	d		Pre-clean N	Last Clean	ed	
General note				Structural	Service	Constru	etion
Location note			ļ	Missellaneous	Hydraulic		

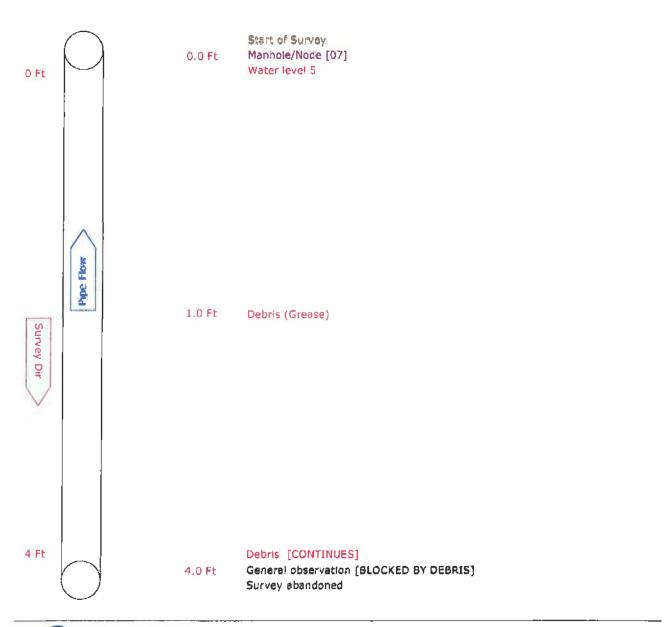
Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		ar	Start of Survey	_	_			
	0.0		MH	Manhole/Node					07
	0.0		WL	Water level	i			5	
	1.0		DEG	Debris (Grease)	L				
	4.0		DE	Debris	L				CONTINUES
	4.0		90	General observation	1				BLOCKED BY DEBRIS
	4.0		9A	Survey abandoned					

4.0 Ft Total Length Surveyed

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Work Orde Facility	ır		tract Operator I	NJP			Video Var	n Ref 10)		Serveyed	tup 47 d On 10	25/2012
Street Nam		Barbara Worth Rd			СНу		Holtv	ille					
Surface Survey pu		Random survey of pipes	and things					We	athei	r D	гу		
Pipe Use	Sanitary		Sche	dule	length		Ft	From	07			Depth	Ft
Shape	Circular		Size	8	by	ins		То	08			Depth	Ft
Material	Vitrified	clay	Joint	вра	cing	Ft		Direct	lon	Ups	tream		
Lining			Year	laid				Pre-cla	an	N	Last clear	ned	
General no	ote						-	Structi	ira)		Service	Cons	tructional
Location n	ote							Miscel	lanao	US.	Hydraulic		





for Bureau Veritas NA

Work	Order			Contract				- 1	Vide	IQ.		8	Setup 48	
F	acility			Operator N	IJP			Va	n Re	of 10		Surveye	d On 10/2	5/2012
Str	reet Name	Bart	ara Wo	rth Rd			City	Hol	tville	9				
Loca	ation type	i												
	Surface	•												
Survey	purpose	Rand	lom sun	ey of pipes and thir	ngs		W	/esti	her	Dry				
Pipe	Use Sani	tary			Sche	d length		F	ı	From	07		Depth	Ft
Si	паре Сігсі	ılar			Size 8	by	ins		- 1	To	08		Depth	Ft
	e rlai Vitrif		ay .		Joint Spac	cing	Ft		- 1	Direc	tion Up			
	ning		•		Year lak	_				Pre-c	lean N	Last Cle	aned	
Gener	ral note								7	Struct	ural	Service	Cons	structiona
	on note									Misca	Haneoue	Hydraulic		
Video	Count	CD	Code				Sev	Fr	To	Value	Remark	 (S	<u>-</u>	
	0.0		\$Ŧ	Start of Survey										
	0.0		МН	Manhole/Node							07			
	0.0	i	WL	Water level						3				
	8.0		DS	Begin Pipe Sag				İ						
<u> </u>	13.7		DF	End pipe sag		-]								
	114.1		CN	Service Connection	n			02						_
	146.1		CC	Circular Crack			M	12	12					
	146.7		CB	Break in Connection	on			12						
	146.7		ĞL	Crack longitudinal			М	01						
	147.3		B	Broken Pipe			L	12	12					
	151.3		MH	Manhole/Node							08			
-										1				

151.3 Ft Total Length Surveyed

Finish of Burveys

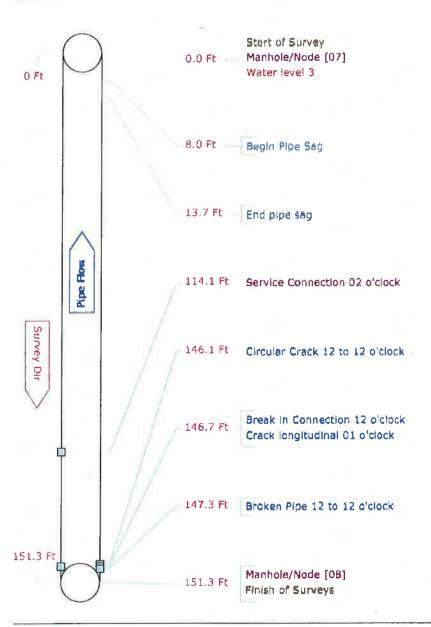
Scores

151.3

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Work Order Facility	Cont	iract Operator NJP	Video Van	Ref 10		18 10/25/2012
Street Name Location type Surface Survey purpose	Barbara Worth Rd Random survey of pipes	City and things	Holtví	days a	Dry	
Pipe Use Sanita Shape Circu Material Vitrifia Lining	•	Schedule length Size 8 by Joint spacing Year laid	Ft ins Ft	From 07 To 08 Direction Ups Pre-clean N	Depth Depth stream Last cleaned	Ft Ft
General note	South to the outside in			Structural Miscelleneous	Service Co	nstructional





PipeLogix Inc. Phone: 866-299-3150

Fax: 760-406-6023

for Bureau Veritas NA

Work Order	Contract		Vic	leo	Set	up 49	
Facility	Operator NJP		Van i	Ref 10	Surveyed (On 10/25/2	012
Street Name Barbara V Location type Surface Survey purpose Random st			City Holtvi				
Pipe Use Senitary	Sc	hed length	Ft	From28		epth	Ft
Shape Circular	Size 8	by	ine	To 29		epth	Ft
Material Vitrified clay	Joint S	pacing	Ft	Direction Up			
Lining	Year	iaid		Pre-clean N	Last Clean	ed	
General note				Structural	Service	Constru	ctiona
Location note				Miscellangous	Hydraulic		

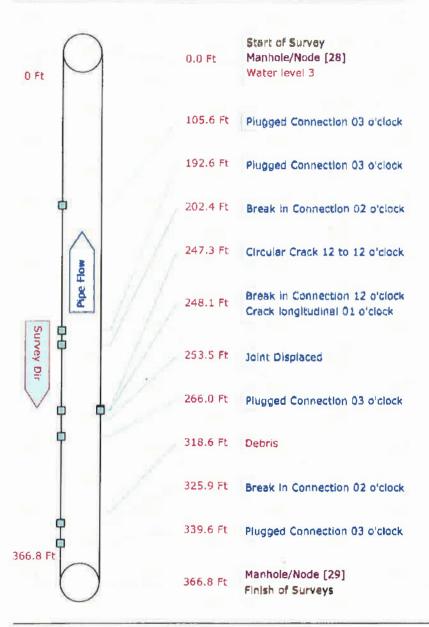
Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0	[ST	Start of Survey					
	0,0		MH	Manhole/Node					28
	0.0		WL	Water level	İ			3	5
	105.6		CP	Plugged Connection		03			
	192.6		CP	Plugged Connection		03			
	202.4		CB	Break in Connection		02			
	247.3		CC	Circular Crack	M	12	12		
	248.1		CB	Break In Connection		12			
	248.1		OL	Crack longitudinal	М	01			
	253.5		JD	Jöint Displaced	M				
	266.0	Ī	CP	Plugged Connection		03			
	318.6		DE	Debris	L				
	325.9		CB	Break in Connection		02			
	339.6	Ī	CP	Plugged Connection		03			
	366.8		MH	Manhole/Node					29
	366.8		FH	Finish of Surveys					

366.8 Ft Total Length Surveyed

Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Work Order Facility	Contr Op	act perator NJP	Vide Va	n Ref 10	Setup Surveyed On	49 10/25/2012
Street Name Location type Surface Survey purpose	Barbara Worth Rd Random survey of pipes	City and things	Holb	0.00	Ory	
Pipe Use Sanita Shape Circula Material Vitrifie	ar	Schedule length Size 6 by Joint spacing	Ft ins Ft		Depth Depth stream	
Lining General note Location note		Year laid		Pre-clean N Structural Miscellaneous	Service Co	onstructional





for Bureau Veritas NA

Work Order	Contract		Vld	leo	Set	tup 50	
Facility	Operator NJP		Van F	Ref 10	Surveyed On 10/25/2012		
Street Name Barbara Worth Location type Surface Survey purpose Random survey			Holtvil eather				
Pipe Use Sanitary	Schee	d length	Ft	From 29		Depth	Ft
Shape Circular	Size 8	by ins		To 30	1	Depth	Ft
Material Vitrified clay	Joint Space	ing Ft		Direction Up			
Lining	Year laid	1		Pre-clean N	Last Clear	ned	
General note				Structural	Service	Constr	uctiona
Location note				Migoellancous	Hydraulic		

Video	Count	CD	Code		Sev	Fr	Τo	Value	Remarks
	0,0		ST	Start of Survey					
	0.0		MH	Manhole/Node					29
	0.0		WL	Water level				5	
	35.8		CB	Break in Connection		02			
	50.2		CP	Plugged Connection		03			
	81.4		CB	Break in Connection		03			
	124.1		CP	Plugged Connection		02			
	157.0		C8	Break in Connection		03			
	197.6		CP	Plugged Connection		03		Ĺ	
	270.7		CB	Break in Connection		02			
	276.7		GP	Plugged Connection		Öä			
	327.8		CN	Service Connection		02			
	339.7		CN	Sarvice Connection		02		L	
	359.3		MH	Manhole/Node					30
	359.3		FM	Finish of Surveys					

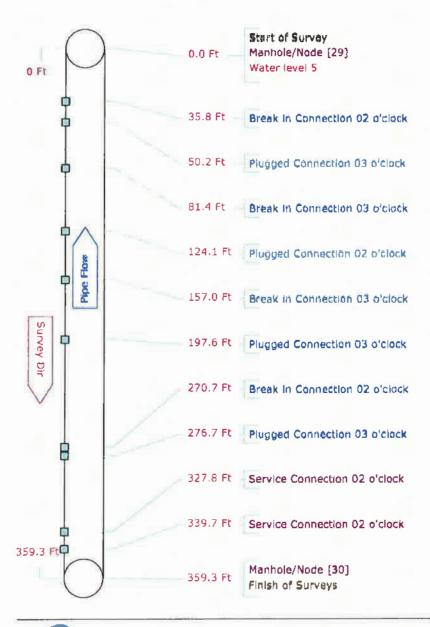
359.3 Ft Total Length Surveyed

Scores

ALCOHOL: NAME OF TAXABLE PARTY.	THE RESERVE OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY 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second second second second second second second second second second second second second secon		CONTRACTOR OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE 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PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE
Structural:	Total	Mean Defect	Peak	Mean Pipe
Service:	Total	Mean Defect	Peak	Mean Pipe



Pipe Gra	aphic R	eport of PLR 30		X			tor	Burea	iu V	erita	S NA			
Work Ord	er	Co	ontract Operator	NJP			Video Van	Ref 10			Set Surveyed	•	50 10/25/20	12
Street Nar Location Surface		Barbara Worth Rd			City		Holtvil	le						
Survey p	прозе	Random survey of pip	es and things					We	athe	r Di	у			
Pipe Use	Sanitar	/	Sche	dule	length		Ft	From	29			Depth	1	Ft
Shape	Circular		Size	6	by	ins		To	30		(epth	ı	Ft
Material	Vitrified	clay	Joint	spac	ing	Ft		Direct	ion	Upst	ream			
Lining			Year	laid				Pre-cle	эп	N	Lest cleane	hd		
riming			I del	,4,4				10-014	-	• • •		-		
General n	ote		1021	idid				Structu			Service		onstructio	nal





for Bureau Veritas NA

Work Order	Contract		Video)	Set	t up 51	
Facility	Operator NJP		Van Re	f 10	Surveyed	On 10/29/2	012
Street Name Berbara W	orth Rd	City	Holtville				
Location type Surface							
Survey purpose Random su	rvey of pipes and things	v	Veather	Dry			
Pipe Use Sanitary	Sched	length	Ft	From 28		Depth	Ft
Shape Circular	Size 4	by ins	5	To 33		Depth	Ft
Material Vitrified clay	Joint Space	ing Ft		Direction Up			
Lining	Year laid	l		Pre-clean N	Last Clear	ned	
General note RAN WITH PU	JSH CAMERA			Structural	Service	Constru	ctiona
Location note				Miscellaneoua	Hydraulic		

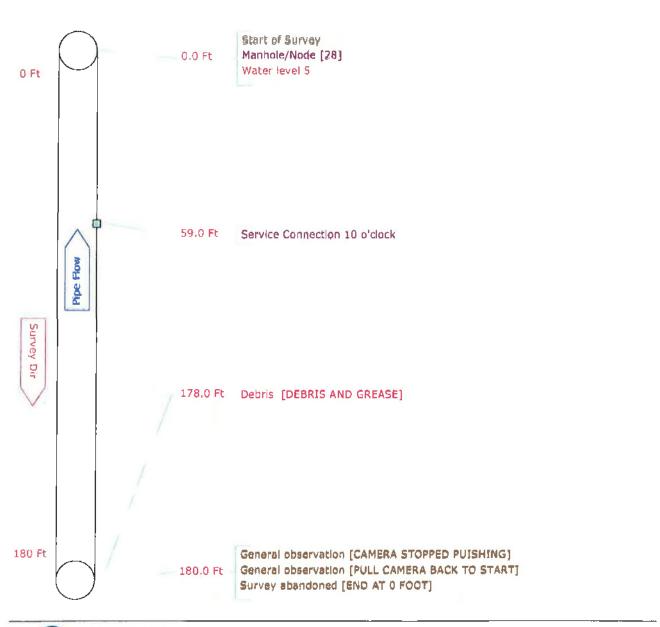
Video	Count	CD	Code		Sev	Fr	To	Value	Remarks
	0.0		97	Start of Survey					
	0.0		MH	Manhole/Node					28
	0.0		WL	Water level				5	
•	59.0		ÇN	Service Connection		10			
	178.0		DE	Debris	M				DEBRIS AND GREASE
	180.0		GO	General observation					CAMERA STOPPED PUISHING
	180.0		90	General observation					PULL CAMERA BACK TO START
	180.0		9A	Survey abandoned					END AT 0 FOOT

180.0 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 75	Mean Defect 37.5	Peak 75	Mean Pipe 0.4



Work Order Facility	Contract Operator NJP	Vldeo Van	Ref 10		i1 10/29/2012
Street Name Barbara Worth Rd Location type Surface	City	Hołtvi			
Survey purpose Random survey of	pipes and things		Weather D)ry	
Pipe Use Sanitary	Schedule length	Ft	From 28	Depth	Ft
Shape Circular	Size 4 by	ins	To 33	Dapth	Ft
Material Vitrified clay	Joint spacing	Ft	Direction Ups	stream	
Lining	Year laid		Pre-clean N	Last cleaned	
General note RAN WITH PUSH CA	MERA		Structural	Service Co	nstructional
Location note			Miscatlencous	Hydraulic	







Tabular Report of PLR PUMP STATION 01 A for Bureau Veritas NA

Work Order Con	tract	Vld	90	Se	tup 40	
Facility Opera	itor NJP	Van R	ef 10	Surveyed	On 09/27/2	012
Street Name Evan Hewes Hwy	(ity Holtvill	е			
Location type						
Surface						
Survey purpose Random survey of pipes a	nd things	Weather	Dry			
Pipe Use Sanitary	Sched length	Ft	From PUMP ST	ATION 01	Depth	Ft
Shape Circular	Size 4 by	ins	To NORTH		Depth	Ft
Material Polyvinly chloride	Joint Spacing	Ft	Direction Dow	n		
Lining	Year laid		Pre-clean N	Last Clea	ined	
General note Valve removed for camera a	ccess		Structural	Service	Constru	ctiona
Location note Line is a force main			Miscellaneous	Hydraulic		

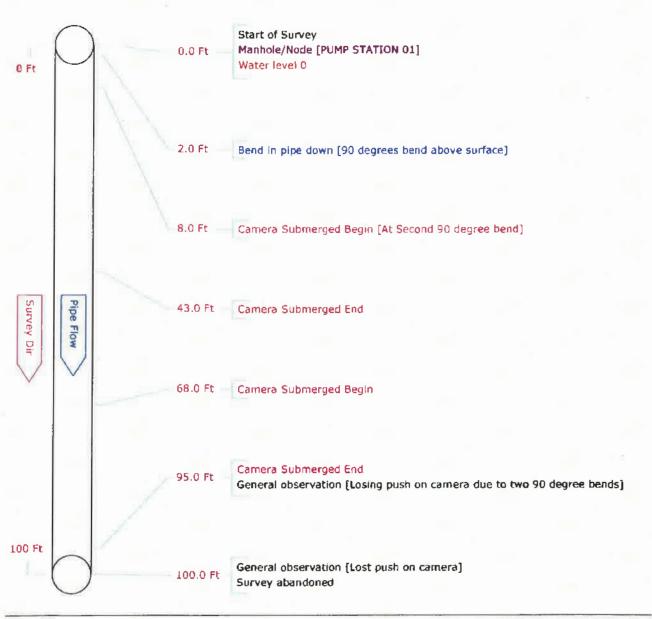
Video	Count	ÇD	Code		Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey					
	0.0		MH	Manhole/Node					PUMP STATION 01
	0.0		WL	Water level				0	
	2.0		LD	Bend in pipe down			Ĺ		90 degrees bend above surface
	8.0		CUB	Camera Submerged Begin					At Second 90 degree bend
	43.0		CUE	Camera Submerged End					
	68.0		CUB	Camera Submerged Begin			L.		
	95.0		CUE	Camera Submerged End					
	95.0		GO	General observation			L		Losing push on camera due to
	100.0		GO	General observation					Lost push on camera
	100.0		SA	Survey abandoned					

100.0 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0



Work Orde Facility	r	Contract Operator NJP	Vide Vai	n Ref 10	Setup Surveyed On	40 09/27/2012
Street Nam Location ty Surface		y City	Holty	rille		
C.L	annes - Dondon susuau	of place and things		this att a	- D	
survey pu	rpose Random survey	of pipes and things		Weathe	r Dry	
	Sanitary	Schedule length	n Ft	_	MP STATION 01 Dep	th Ft
Pipe Use	 		n Ft ins	From PUI		202
Pipe Use Shape	Sanitary	Schedule length		From PUI	MP STATION 01 Dep	
Pipe Use Shape Material	Sanitary Circular	Schedule length Size 4 by	ins	From PUI	MP STATION 01 Dep	
Survey pu Pipe Use Shape Material Lining General no	Sanitary Circular Polyvinly chloride	Schedule length Size 4 by Joint spacing Year laid	ins	From PUI To NO Direction	MP STATION 01 Dep RTH Dept Downstream N Last cleaned	







Tabular Report of PLR PUMP STATION 01 Y

Operator NJP

Υ	for B	urea	u Veritas NA		
		Vid	80	Setup 41	
	,	Van R	lef 10 Survey	ed On 09/27/	2012
	City I	Holtvill	e	_	
	We	ather	Dry		
Sched leng	th	Ft	FromNORTH	Depth	Ft
e 4 by	ina		To PUMP STATION 01	Depth	Ft
nt Spacing	Ft		Direction Up		

Shape Circular

Material Polyvinly chloride
Lining

General note Reverse setup attempted for maximum length of
Location note inspection

Size 4 by ina
To PUMP STATION 01 Depth Ft
Direction Up
Pre-clean Y Last Cleaned 9/25/2012

Structural Service Constructional
Hydraulic

Video	Count	CD	Code	_ _ _	Sev	Fr	To	Value	Remarks
	0.0		ST	Start of Survey		L			
	0.0		MH	Manhole/Node					NORTH
	0.0		WL	Water level				50	
	21.0		CUB	Camera Submerged Begin					
	33.0		CUE	Camera Submerged End]		Ī		
	99.0		CUB	Camera Submerged Begin					
	132.0		CUE	Camera Submerged End					
	315.0		GO	General observation				[]	Started video at 315ft
	315.0		SA	Survey abandoned					Completed video at 0ft at DS

315.0 Ft Total Length Surveyed

Scores

Work Order Facility

Location type Surface

Pipe Use Sanitary

Street Name Evan Hewes Hwy

Survey purpose Random survey of pipes and things

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0



Pipe Graphic Report of PLR PUMP STATION 01 Υ for Bureau Veritas NA Work Order Video Contract Setup 41 Facility Operator NJP Van Ref 10 Surveyed On 09/27/2012 Street Name Evan Hewes Hwy City Holtville Location type Surface Survey purpose Random survey of pipes and things Weather Dry Pipe Use Sanitary Schedule length Ft From NORTH Depth Ft Shape Circular Size 4 ins To PUMP STATION 01 Depth Ft Material Polyviníy chloride Joint spacing Ft Direction Upstream Lining 9/25/2012 Year laid Pre-clean Lest cleaned

Structural

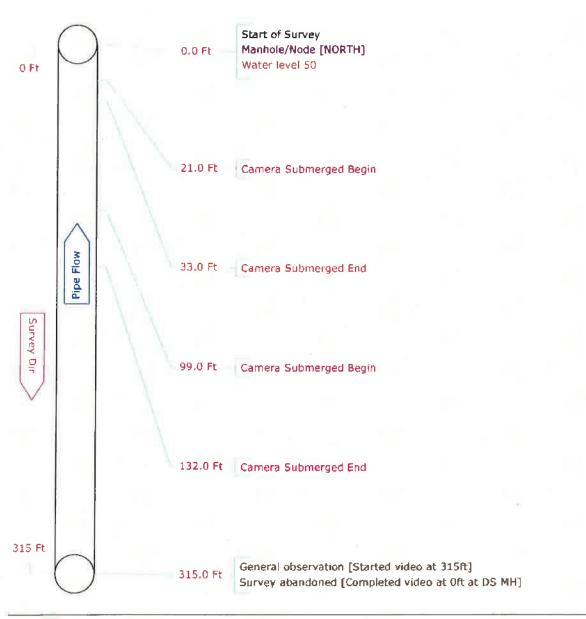
Miscellaneous

Service

Hydraulic

Constructional

Reverse setup attempted for maximum length of





General note

Location note

inspection



Work Order Contract				Víde			90			Setup 52				
Facility Operator N			IJP		Va	ก R	ef 10		Survey	ed On 10/29	2012			
Str	Street Name Barbara Worth Rd						Hol	ltyille	9				_	
Loca	tion type	I												
	Surface	•												
Survey	ригрове	Rando	om sur	vey of pipes and thir	ngs	W	/eatl	her	Dry					
Pipe	Use Sani	tary			Sched length		F	t	From	OPEN PI	Г	Depth	Ft	
Sh	iape Circu	iler			Size 4 by	ins			To	TO NORT	Ή	Depth	Ft	
Material Wittled sla y					Joint Spacing	Ft			Direc	Direction Down				
Lit	gning				Year laid				Pre-c	lean N	Last C	leaned		
Gener	al note R	AN WI	TH PU:	SH CAMERA					Struc	tural	Service	Const	ructiona	
Locatio	on note								Misce	aveenall	Hydrauli	C		
Video	Count	CD	Code			Sev	Fr	To	Value	Remark	(S			
	0.0		ST	Start of Survey										
	0.0		MH	Manhole/Node						OPEN P	IT			
	0.0		WL	Water level					0					
	0.0		₫¢)	General observation	an		<u>L</u> .			END IN	₽I₹			
	64.0		CUE	Camera Submerg	ed End									
	165.0		CUE	Camera Submerg	ed End	Ĺ	L.	<u> </u>						
	196.0		CUE	Camera Submerg	ed End									
	196.0		DE	Debris		M				DEBRIS	AND GRE	ASE		
	218.0		DE	Debris		М				UNDER	FLOW			
	298.0		LL.	Bend in pipe left						1				
	298.0		CUB	Camera Submerg	ed Begin]							
	308.0		90	General observation	on					END OF	CABLE			
	308.0		go_	General observation	n			L .		START	OF RUN			
	308.0		9A	Survey abandoned	t									
	308.0	EA	T-4-()	ength Surveyed										

Total 0 Total 150

Mean Defect 0 Mean Defect 21.4

Peak 0 Peak 75

Mean Pipe 0 Mean Pipe 0.5

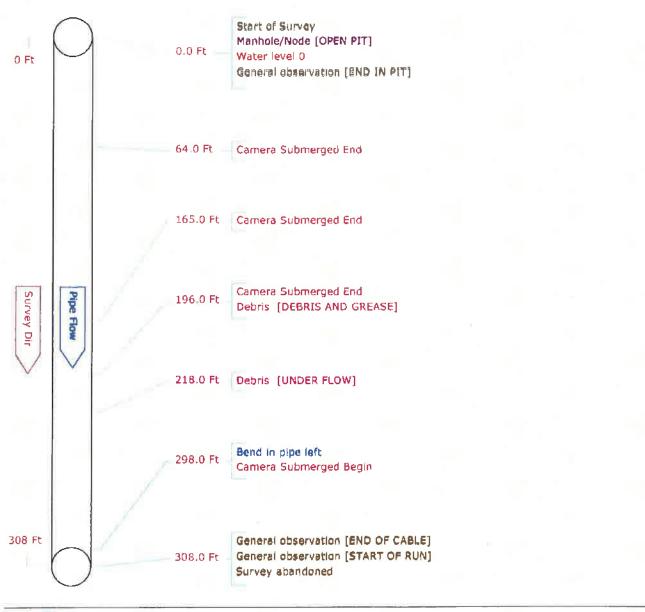


Scores

PipeLogix Inc. Phone: 866-299-3150 Fax: 760-406-6023

Structural: Service:

Pipe Graphic Report of PLR OPEN F	Y TIS	for Bureau	Veritas NA
Work Order Contract Facility Ope	ct orator NJP	Video Van Ref 10	Setup 52 Surveyed On 10/29/2012
Street Name Location type Surface Survey purpose Random survey of pipes ar	City	Holtville We at	her Dry
Pipe Use Sanitary	Schedule length		OPEN PIT Depth Ft
Shape Circular Material Vitrified clay Lining	Size 4 by Joint spacing Year laid	ins To Direction Pre-clear	
General note RAN WITH PUSH CAMERA Location note		Structure Miscellar	





PipeLogix Inc. Phone: 866-299-3150

Fax: 760-406-6023



Tabular Report of PLR	TO PUMP STATION	X	for	Bureau Veritas NA
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Work Order Con	ntract	Vide	90	Se	etup 53	
Facility Oper	rator NJP	Van R	ef 10	Surveyed On 10/29/2012		
Street Name Barbara Worth Rd Location type Surface Survey purpose Random survey of pipes	and things	City Holtville	e Dry			
Pipe Use Sanitery Shape Circular Material Walled Stay Lining	Sched length Size 4 by Joint Spacing Year laid	Ft ins Ft	From OPEN PIT To TO PUMP Direction Up Pre-clean N		Depth Ft Depth Ft	
General note RAN WITH PUSH CAMERA Location note	4		Structural Miscellaneous	Service Hydraulic	Constructiona	

Video	Count	CD	Code		Sev	Fr	То	Value	Remarks
	0.0		97	Start of Survey					
	0.0		MH	Manhote/Node					OPEN PIT
	0.0		WL	Water level		Ī		0	
	24.0		CUE	Camera Submerged End					
	58.0		CUB	Camera Submerged Begin					
	72.0		CUE	Camera Submerged End					
	178.0		GO	General observation	Ī				START OF RUN
	178.0		CUB	Camera Submerged Begin					
	178.0		go .	General observation					END OF RUN AT PIT
	178.0		BA	Survey abandoned					

178.0 Ft Total Length Surveyed

Structural:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0
Service:	Total 0	Mean Defect 0	Peak 0	Mean Pipe 0



Pipe Graphic Report of PLR TO PUM	P STATION	X for	Bureau Veritas	NA	D
Work Order Contract Facility Open	t rator NJP	Video Van		Setup Surveyed On	53 10/29/2012
Street Name Barbara Worth Rd Location type Surface Survey purpose Random survey of pipes and	City	Holtvi	le Weather Dry		
Pipe Use Sanitary	Schedule length	Ft	From OPEN PIT	Depti) Ft
Shape Circular	Size 4 by	ins	To TO PUMP	STATION Depth	ı Ft
Material Vitrified clay	Joint spacing	Ft	Direction Upstre	eam	
Lining	Year laid		Pre-clean N	Leet cleaned	
General note RAN WITH PUSH CAMERA	40		Structural	Service C	onstructional
Location note			Miscellaneous	Hydraulic	

