



2023 OILY WATER SEWER SUMMARY REPORT MATRIX RANKING ADDENDUM

**BP Cherry Point Refinery
Blaine, WA**

December 2024

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Overview

Per Agreed Order 16296, bp Cherry Point, located at 4519 Grandview Road, Blaine, WA, submits annually to Ecology the Oily Water Sewer (OWS) Summary Report, which includes findings and actions from the years' camera inspection of sections of the onsite OWS. The first summary report was submitted in March 2021, and reports have been submitted by March 31st of each subsequent year which summarize the previous year's work.

In 2024, at Ecology's request, bp Cherry has developed an Oily Water Sewer Rating Matrix (*Attachment 2: OWS Rating Matrix*) to aid in determining the severity of potential releases and outline actions to be taken in response to any OWS findings. The rating matrix is drawn from the National Association of Sewer Service Companies (NASSCO) guidelines standard, with emphasis on site-specific concerns such as pipe service, flow rate, and material composition.

This submittal includes the findings from the 2023 submittal, ranked using the developed rating matrix, with additional discussion on each of the inspection areas noted in the original 2023 submission. Each inspection activity is rated using the NASSCO guidelines and is summarized in *Attachment 1: 2023 Oily Water Sewer Ratings*.

Defects found during the inspection are rated as either structural (fractures, offset joints, damage, etc.) or operations and maintenance (deposits impeding flow, etc.) and are given a condition grade of 1 through 5. Defects are summed, then divided by the total number of defects and a rating index is determined. Each inspection area is given a structural rating index and an Operations and Maintenance (O&M) rating index. Each of these ratings is then taken and applied to the OWS Rating Matrix and actions (if any) are determined.

Additionally, manhole assessment certification program (MACP) and pipeline assessment certification program (PACP) inspection forms are included for reference for each of the inspection areas as *Attachment 3: PACP and MACP Inspection Records*.

Inspection Activity #1; MH 40-35

Description:

Manhole 40-35 is an epoxy lined concrete structure located on 10th street, just north of the calciner coke barns. It has one inlet and one outlet pipe, each 30" in diameter. MH 40-35 is located on a main OWS line that conveys material with near-continuous flow from the crude, ISOM, calciner, coker and diesel units.

Prior to inspection the manhole was isolated and cleaned by fire water washing, then vacuumed until the surfaces of the manhole were visible for the camera inspection.

Findings of Sewer Assessment:

The camera operator observed that there was an accumulation of debris, including rocks and gravel, obscuring a complete view of the bottom of the vault. It was also noted that the cable lifting loops used during installation were visible. This is a common observation in manholes as they are permanent features of the concrete structure and are used during installation.



Figure 1: Video still from MH 40-35 showing rocky debris and cable lifting loops.

MH 40-35 was given a structural rating of three and an O&M rating of two (see *Attachment 1: 2023 Oily Water Sewer Ratings*).

Liner material was noted to be wearing off near the middle of the manhole and this was captured in the structural rating. Wire, debris and gravel was obscuring the view of the bottom of the manhole and this was captured in the O&M rating.

MH 40-35 Structural Rating: 3

Per *Attachment 2: OWS Rating Matrix*, a defect with rating three in continuous service would trigger confirmation sampling soil sampling if the structural integrity of the feature is at risk. MH 40-35 is an epoxy lined concrete structure. The inspection noted that the epoxy liner was observed to be wearing off. No integrity issues were observed in the structure of the underlying concrete manhole, therefore no confirmation soil sampling was conducted.

MH 40-35 O&M Rating: 2

Per *Attachment 2: OWS Rating Matrix*, a defect with rating two in continuous service, could trigger confirmation sampling soil sampling if the structural integrity of the feature is at risk. Because the O&M rating was due to debris obscuring the view of the manhole bottom surface, and there was no indication that this debris contributed to increased concern for the structural integrity of the manhole, no confirmation soil sampling was conducted.

Nature and Extent of Releases and Corrective Actions Taken:

No releases were observed, and no immediate remediation efforts were undertaken. This manhole is part of a sealed sewer system and is designed with a sump and water seal. As such, erosion from falling liquid is not a concern.

Although there are no structural concerns nor evidence of a release or threatened release observed, because the bottom of the manhole was not completely visible to the camera operator, this manhole will be reinspected at a future date. Results of that inspection, when complete, will be included in the Oily Water Sewer Summary Report.

Inspection Activity #2; MH 40-36

Description:

Manhole 40-36 is an epoxy lined concrete structure located on the northeast corner of calciner coke barn #2, just west of the intersection of 10th Street and Avenue D. It has three inlet pipes, two are 12" and one is 30". MH 40-36 is located on a main OWS line that conveys material with near-continuous flow from the crude, ISOM, calciner, coker and diesel units.

Prior to inspection the manhole was isolated and cleaned by fire water washing, then vacuumed until the surfaces of the manhole were visible for the camera inspection.

Findings of Sewer Assessment:

The camera operator observed that there was approximately 6" of water in the bottom of this manhole, which prevented the inspection of the bottom-most portion. The portion of the manhole visible from the top down to the water line near the bottom is epoxy lined and appeared in good repair, without defects or missing sections of liner.



Figure 2: MH 40-36 showing approximately 6" of water in the bottom of the manhole.

MH 40-36 was given a structural rating of zero and an O&M rating of zero (see *Attachment 1: 2023 Oily Water Sewer Ratings*).

MH 40-36 Structural Rating: 0

Per *Attachment 2: OWS Rating Matrix*, a defect with rating zero would not trigger confirmation soil sampling.

MH 40-36 O&M Rating: 0

Per *Attachment 2: OWS Rating Matrix*, a defect with rating zero would not trigger confirmation soil sampling.

Nature and Extent of Releases and Corrective Actions Taken:

No releases were observed, and no immediate remediation efforts were undertaken.

Although there are no structural concerns or evidence of a release or threatened release observed, because the bottom of the manhole was not completely visible to the camera operator, it will be reinspected at a future date. Results of that inspection, when complete, will be included in the Oily Water Sewer Summary Report.

Inspection Activity #3; MH 40-78 to MH 40-36

Description:

The section of sewer that runs from MH 40-78 to MH 40-36 is 12" diameter unlined concrete pipe approximately 91' in length. It runs southeast from the south side of the flares unit, under Avenue D and terminates at MH 40-36, located on the northeast corner of Coke Barn 1 near 10th street. It conveys mainly seasonal rainwater runoff from areas outside of unit boundaries on the west side of the refinery. Intermittent runoff from the fire training grounds is also captured in this sewer system.

Prior to inspection all sections of pipe were isolated and cleaned by hydraulic jetting until the pipe surfaces were visible for the camera inspection.

Findings of Sewer Assessment:

The camera operator observed a circumferential crack at a pipe joint approximately 76' south/southeast of MH 40-78. There was evidence of groundwater intrusion by staining, but no active water inflow at the time of inspection.

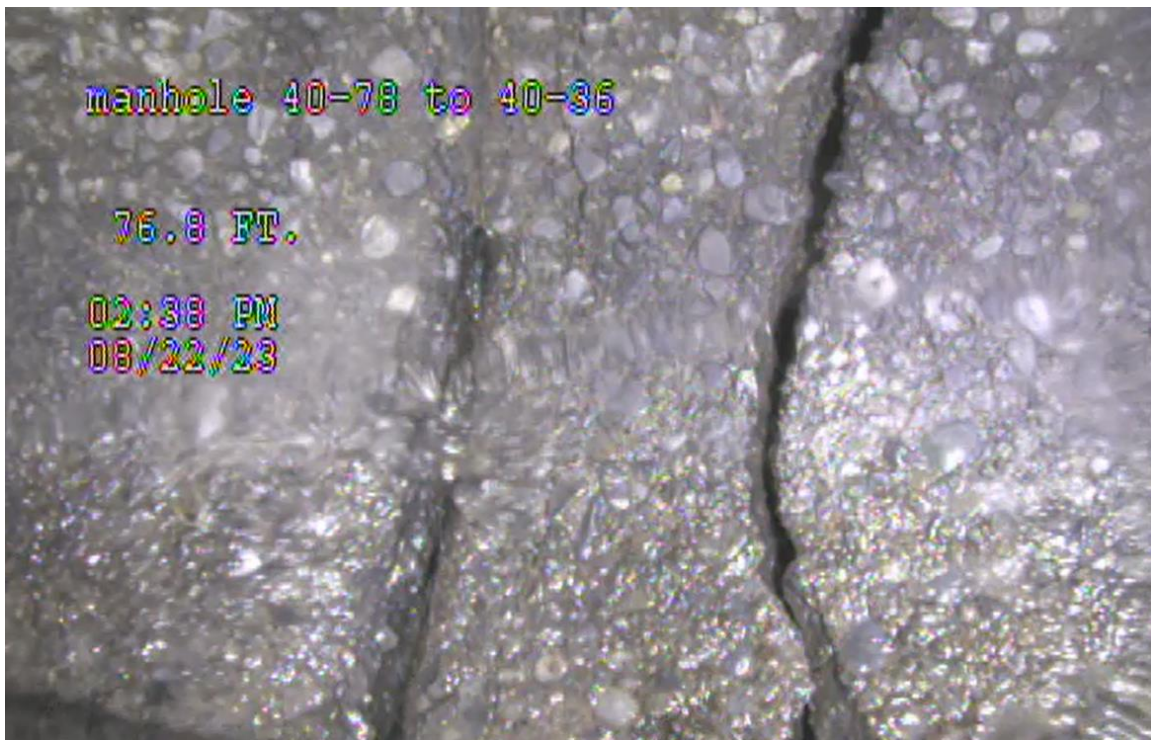


Figure 3: Circumferential crack on line MH 40-78 to MH 40-36

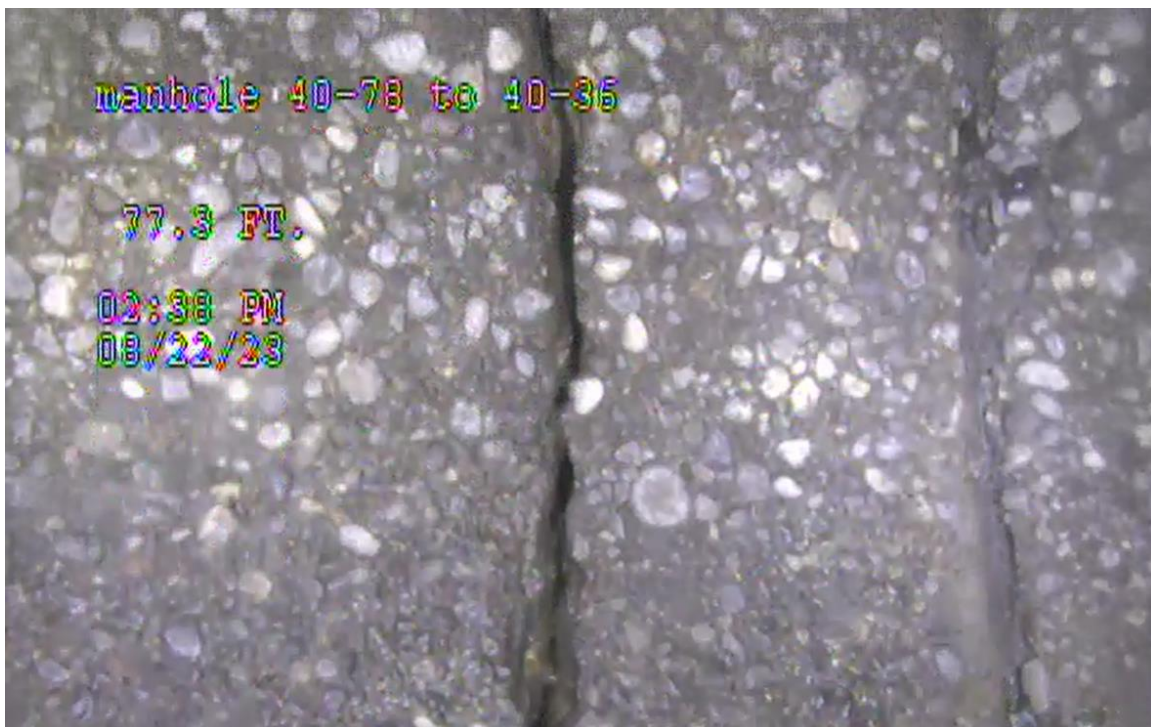


Figure 4: Circumferential crack on line MH 40-78 to MH 40-36

MH 40-78 to MH 40-36 was given a structural rating of 2.4 and an O&M rating of two (see Attachment 1: 2023 Oily Water Sewer Ratings).

MH 40-78 to MH 40-36 Structural Rating: 2.4

Per *Attachment 2: OWS Rating Matrix*, a defect with rating two would only trigger consider conducting confirmation sampling if the line was in high or continuous flow or high BTEX or hydrocarbon content.

This line service does not meet either of these requirements, as it conveys mainly seasonal rainwater runoff and intermittent flow from the refinery training grounds. Confirmation sampling was not conducted as a result of this inspection activity.

MH 40-78 to MH 40-36 O&M Rating: 2

Per *Attachment 2: OWS Rating Matrix*, a defect with rating two would not trigger confirmation soil sampling because this line conveys seasonal rainwater runoff and intermittent flow from the refinery training grounds. Confirmation sampling was not conducted as a result of this inspection activity.

Nature and Extent of Releases and Corrective Actions Taken:

No releases were observed, and no immediate remediation efforts were undertaken.

Although there are no structural concerns or evidence of a release or threatened release observed, it is recommended that this section of sewer pipe is relined to strengthen it because this section is subjected to heavy traffic and equipment loads.

Inspection Activity #4; MH 40-32 to MH 40-34

Description:

The section of sewer that runs from MH 40-32 to MH 40-34 is 6" diameter cast iron pipe approximately 3' in length. This line is in intermittent service and conveys rainwater and occasional blowdown from the fuel gas recovery (FGR) units located in the coker unit.

This small section of pipe was identified as part of the 2021 inspection activities, but inspection was not conducted at that time. This section was inspected in 2023 and is included in this report.

Prior to inspection this section of sewer was isolated and confirmed free of liquid and debris. No jetting was required to expose the surfaces for inspection.

Findings of Sewer Assessment:

This line was intact and no evidence of releases or threatened releases were observed. It was in good repair, with no observed damage or degradation.



Figure 5: Video still of the line from MH 40-32 to 40-34.

MH 40-32 to 40-34 was given a structural rating of zero and an O&M rating of two (see *Attachment 1: 2023 Oily Water Sewer Ratings*).

MH 40-32 to 40-34 Structural Rating: 0

Per *Attachment 2: OWS Rating Matrix*, a line with rating zero would not trigger confirmation soil sampling.

MH 40-78 to MH 40-36 O&M Rating: 2

Per *Attachment 2: OWS Rating Matrix*, a defect with rating two would not trigger confirmation soil sampling because the line does not see high or continuous flow. Confirmation sampling was not conducted as a result of this inspection activity.

Nature and Extent of Releases and Corrective Actions Taken:

No actions were taken or repairs to the system were planned based on the results of these inspections. No corrective actions or interim measures were taken to remediate soil or groundwater.

2023 Oily Water Sewer Ratings**Manhole 40-35**

Condition Grade	Defects		Manhole Grade	
	Structural	O&M	Structural	O&M
5	0	0	0	0
4	0	0	0	0
3	1	0	3	0
2	0	2	0	4
1	0	0	0	0
Total Defects	1	2		
Overall Manhole Rating			3	4
Rating Index			3	2

Manhole 40-36

Condition Grade	Defects		Manhole Grade	
	Structural	O&M	Structural	O&M
5	0	0	0	0
4	0	0	0	0
3	0	0	0	0
2	0	0	0	0
1	0	0	0	0
Total Defects	0	0		
Overall Manhole Rating			0	0
Rating Index			0	0

Manhole 40-78 to 40-36

Condition Grade	Defects		Manhole Grade	
	Structural	O&M	Structural	O&M
5	0	0	0	0
4	0	0	0	0
3	18	0	54	0
2	8	12	16	24
1	5	0	5	0
Total Defects	31	12		
Overall Manhole Rating			75	24
Rating Index			2.4	2

Manhole 40-32 to Manhole 40-34

Condition Grade	Defects		Manhole Grade	
	Structural	O&M	Structural	O&M
5	0	0	0	0
4	0	0	0	0
3	0	0	0	0
2	0	3	0	6
1	0	0	0	0
Total Defects	0	3		
Overall Manhole Rating			0	6
Rating Index			0	2

ATTACHMENT 2: OWS RATING MATRIX

Rating ¹	Characteristics/Examples	Actions and Documentation Low/Intermittent Flow and/or minimal HC ² / content	Actions and Documentation High/Continuous Flow and/or high HC/BTEX ³ content
5	Most significant defect grade. Examples include: collapse, significant holes, broken soil/void visible, joint offset large, missing wall, reinforcement projecting or corroded, groundwater infiltration gushing, deposits impeding >30% of flow.	Confirmed OWS releases with soil or groundwater exceedance of MTCA cleanup levels will be reported to Ecology within 90 days of discovery. Conduct site characterization and schedule for high priority mitigation effort (repair, ongoing monitoring, if necessary, etc.). If the soil surrounding the defect appears impacted due to potential OWS release, immediate response actions will be initiated to stop the source of the potential release and cleanup activities will be initiated.	Confirmed OWS releases with soil or groundwater exceedance of MTCA cleanup levels will be reported to Ecology within 90 days of discovery. Conduct site characterization and schedule for high priority mitigation effort (repair, ongoing monitoring, if necessary, etc.). If the soil surrounding the defect appears impacted due to potential OWS release, immediate response actions will be initiated to stop the source of the potential release and cleanup activities will be initiated.
4	Significant defect grade. Examples: multiple fractures, broken pipe, joint offset medium, minor hole, severe surface damage, groundwater infiltration running, deposits impeding >20% to ≤30% of flow.	Conduct initial release investigation per IRP to determine whether a release has occurred. Increase to Rating 5 if OWS release is confirmed. Schedule for moderate priority mitigation effort based on refinery operational needs and/or accessibility, or reinspect to monitor defect condition.	Conduct initial release investigation per IRP to determine whether a release has occurred. Increase to Rating 5 if OWS release is confirmed. Schedule for moderate priority mitigation effort based on refinery operational needs and/or accessibility, or reinspect to monitor defect condition.
3	Moderate defect grade. Examples include: multiple cracks, longitudinal and spiral fractures; groundwater infiltration dripping; surface corrosion, deposits impeding >10% to ≤20% of flow.	Document in refinery record. Schedule for low priority mitigation effort based on refinery operational needs and/or accessibility, or reinspect to monitor defect condition. Consider conducting confirmation soil sampling if structural integrity is at risk.	Document in refinery record. Schedule for low priority mitigation effort based on refinery operational needs and/or accessibility, or reinspect to monitor defect condition. Conduct confirmation soil sampling if structural integrity is at risk.
2	Minor to moderate defect grade. Examples include: longitudinal and spiral cracks, circumferential fractures, moderate pipe deterioration, groundwater infiltration weeping, deposits impeding ≤10% of flow.	Document in refinery record.	Document in refinery record. Consider conducting confirmation soil sampling if structural integrity is at risk.
1	Minor defect grade. Examples include: circumferential cracks, minor deterioration of the pipe or manhole material, visible aggregate, groundwater infiltration staining.	Document in refinery record.	Document in refinery record.
0	No defect observed.	Document in refinery record.	Document in refinery record.

¹ Ratings are established using NASSCO guidelines per the NASSCO PACP v.8.0, Appendix C

²HC means hydrocarbon or materials containing hydrocarbons

³benzene, toluene, ethylbenzene and xylene (BTEX)



PACP Inspection Form

Header Section

Red font fields = Mandatory, Black font fields = Optional



General Information

1. Surveyed by	2. Certificate No.	3. Reviewed by	4. Reviewer Certificate No.
5. Owner	6. Customer	7. P/O Number	8. Work Order Number
9. Media Label	10. Project	11. Date YYYYMMDD	12. Time HH:MM
14. Weather	15. Pre-Cleaning	16. Date Cleaned YYYYMMDD	18. Purpose of Survey
19. Direction of Survey	20. Inspection Technology Used	21. Inspection Status	
22. Consequence of Failure		23. Pressure Value	

Location

24. Drainage Area	25. Pipe Segment Reference	26. Street (Name & Number)
27. City	28. Location Code	29. Location Details

Pipe

30. Pipe Use	31. Height (Diameter)	32. Width	33. Shape
34. Material	35. Lining Method	36. Coating Method	37. Pipe Joint Length
38. Total Length	39. Length Surveyed	40. Year Constructed YYYY	41. Year Renewed YYYY

Measurements

42. Upstream MH No.	43. Upstrm MH Rim to Invert	44. Upstrm MH Rim to Grade	45. Upstrm MH Grade to Invert
46. Upstream MH Northing*	47. Upstream MH Easting*	48. Upstream MH Elevation**	
49. Downstream MH No.	50. Downstream MH Rim to Invert	51. Downstream MH Rim to Grade	
52. Downstream MH Grade to Invert	53. Downstream MH Northing*	54. Downstream MH Easting*	
55. Downstream MH Elevation**	56. MH Coordinate System*	57. MH Vertical Datum**	58. GPS Accuracy
59. Additional Information			

*Entry required if Northing, Easting or Coordinate System data is recorded.

**Entry required if Elevation or Vertical Datum data is recorded.

Sketch

USMH	DSMH
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Details Section

Details Section

1. Surveyed by	5. Owner	11. Date	13. Sheet No.	42. Upstream MH No.	49. Downstream MH No.
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Details

[illegible]

Red font fields = Mandatory, Black font fields = Optional

MACP Inspection Form

Header Section

General Information

1. Surveyed By (1,2) Brian Garries	2. Certificate Number (1,2) P0035046-122021	3. Reviewed By	4. Reviewer Certificate No.
5. Owner BP	6. Customer	7. P/O Number	8. Work Order 1007494
9. Media Label	10. Project 2023 OWS	11. Date (1,2) YYYYMMDD 20230921	12. Time 11:06
13. Sheet Number (1,2) 1	14. Weather 1	15. Pre-Cleaning (2) L	16. Date Cleaned YYYYMMDD 20230921
17. Purpose of Survey (1,2) F	18. Inspection Level (1,2) 2	19. Inspection Status (1,2) RI	20. Consequence of Failure

Location

21. Drainage Area	22. MH/Access Point No. (1,2) 40-35	23. Street (1,2) UNIT 20	24. City (1,2) Blaine, WA
25. Location Code (2) Z	26. Surface Type (2) ASPHALT	27. Inflow Potential from Runoff	28. Location Details UNIT 20

Manhole

29. MH Use (2) PR	30. Access Type (1,2) AMH	31. Year Constructed YYYY	32. Year Renewed YYYY	33. Evidence of Surcharge (2) N
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Measurements

34. Rim to Invert (2) N	35. Rim to Grade (2) N	36. Grade to Invert (2) N	37. Rim to Grade Exposed
38. Northing*	39. Easting*	40. Elevation**	41. Coordinate System*
42. Vertical Datum**		43. GPS Accuracy	
44. Additional Information			

Red font fields = Mandatory, Black font fields = Optional

*Entry required if Northing, Easting or Coordinate System data is recorded.

**Entry required if Elevation or Vertical Datum data is recorded.

Sketch

MACP Inspection Form

Manhole Component Observation Section

Cover

45. Type (2) SOLID	46. Shape (2) C	47. Size (2) 25.5	48. Center Cover Size
49. Size Width (2) N	50. Cover Material (2) CAS	51. Hole Diameter (Vent) (2) N	52. Hole Number (2) 0
53. Bearing Surface Diameter (2) N	54. Bearing Surface Width (2) N	55. Cover/Frame Fit (2) G	56. Cover Condition (1,2) SOUND

Cover Insert

57. Insert Type (2) N	58. Cover Insert Condition (2) N
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Cover Adjustment Ring

59. Ring Type (1, 2) N	60. Ring Material (2) N	61. Ring Condition (1,2) N	62. Ring Height
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Frame

63. Frame Material (2) CAS	64. Bearing Surface Width (2) N	65. Bearing Surface Depth (2) N	66. Clear Opening Diam (2) N
67. Clear Opening Width (2) N	68. Frame Condition (1,2) SOUND	69. Seal Condition (2) SOUND	70. Offset Distance (2) 0
71. Seal Inflow (2) N	72. Frame Depth		

Chimney

73. Chimney Present (2) Y	74. First Material (2) CR	75. Second Material	76. Chimney I/I
77. Clear Opening	78. Chimney Depth (2) N	79. Lining Interior	80. Lining Exterior
		81. Chimney Condition (1) SOUND	

Cone

82. Type (2) FT	83. Material (2) CR	84. Depth (2) N
85. Lining Interior	86. Lining Exterior	87. Cone Condition (1) SOUND

Wall

88. Wall Diameter (Length)	89. Wall by Size (Width)	90. Material (2) CR	91. Depth (2) N
92. Wall Lining Interior P	93. Wall Lining Exterior	94. Wall Condition (1) SOUND	

Bench

95. Bench Present (2) Y	96. Bench Material (2) CR	97. Bench Lining	98. Bench Condition (1) SOUND
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Channel

99. Channel Installed (2) N	100. Channel Material (2)	101. Type (2) NONE	102. Exposure (2)	103. Channel Condition (1)
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Steps

104. Number (2) 0	105. Material (2) NONE
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Additional Component Information

106. Additional Component Information

Pipe Connections

107. Pipe No. (2)	108. Clock Pos (2)	109. Rim to Invert (2)	110. Direction (2)	111. Material (2)	112. Shape (2)	113. Height (Diam) (2)	114. Width (2)	115. Cond (2)	116. Seal Cond (2)	117. Pipe Type (2)	118. Struct ID	119. Comment
1	06	N	OUT	RCP	C	30	-	S	S	GR		
2	12	N	IN	RCP	C	30	-	S	S	GR		

1= Mandatory Level 1 Inspection Required, 2 = Mandatory Level 2 Inspection Required

Manhole Component Defect Section

1. Surveyed By (1,2) **Brian Garries** 5. Owner **BP** 11. Date (1,2) **20231102** 13. Sheet Number (1,2) **3** 22. MH/Access Point No. (1,2) **MH-35**

[illegible]

1= Mandatory Level 1 Inspection Required, 2 = Mandatory Level 2 Inspection Required

LACP Inspection Form

Header Section

General Information

1. Surveyed by	2. Certificate No.		3. Reviewed by	4. Reviewer Certificate No.
5. Owner	6. Customer		7. P/O Number	8. Work Order Number
9. Media Label	10. Project	11. Date YYYYMMDD	12. Time HH:MM	13. Sheet Number
14. Weather	15. Pre-Cleaning	16. Date Cleaned YYYYMMDD	17. Purpose of Survey	
18. Direction of Survey	19. Inspection Technology Used		20. Inspection Status	
21. Consequence of Failure			22. Pressure Value	

Location

23. Drainage Area	24. Pipe Segment Reference	25. Lateral Segment Reference	
26. Street (Name & Number)	27. City	28. Location Code	29. Location Details

Lateral

30. Pipe Use	31. Size	32. Material	33. Lining Method	34. Total Length
35. Length Surveyed	36. Year Constructed YYYY	37. Year Renewed YYYY	38. Property Line	

Measurements

39. Access Point ID No.	40. Tap Location	41. Rim to Invert	42. Access Pt. Northing*
43. Access Pt. Easting*	44. Access Pt. Elevation**		45. Coordinate System*
46. Vertical Datum**	47. GPS Accuracy	48. Downstream Manhole ID No.	
49. Upstream Manhole ID No.	50. Start Manhole	51. Additional Information	

*Entry required if Northing, Easting or Coordinate System data is recorded.

**Entry required if Elevation or Vertical Datum data is recorded.

Details Continuation Section[illegible]

Red font fields = Mandatory, Black font fields = Optional

MACP Inspection Form – Header Section

General Information

1. Surveyed By (1,2) Brian Garries	2. Certificate Number (1,2) P0035046-122021	3. Reviewed By	4. Reviewer Certificate No.
5. Owner BP	6. Customer BP	7. P/O Number	8. Work Order 1031778
9. Media Label	10. Project 2024 OWS	11. Date (1,2) 20240916 <small>YYMMDD</small>	12. Time 15:34
13. Sheet Number	14. Weather 1	15. Pre-Cleaning (2) L	16. Date Cleaned 20240916 <small>YYMMDD</small>
17. Purpose of Survey (1,2) F	18. Inspection Level (1,2) 2	19. Inspection Status (1,2) CI	20. Consequence of Failure

Location

21. Drainage Area	22. MH/Access Point No. (1,2) 40-36	23. Street (1,2) D AVE	24. City (1,2) BLAINE, WA
25. Location Code (2) Z	26. Surface Type (2) ASPHALT	27. Inflow Potential from Runoff	
28. Location Details COKE BARNS			

Manhole

29. MH Use (2) PR	30. Access Type (1,2) AMH	31. Year Constructed <small>YYYY</small>
32. Year Renewed <small>YYYY</small>		33. Evidence of Surcharge (2) N

Measurements

34. Rim to Invert (2) N	34A. Rim to Lowest Point	35. Rim to Grade (2) N	36. Grade to Invert (2) N
37. Rim to Grade Exposed	38. Northing*	39. Easting*	40. Elevation**
41. Coordinate System*	42. Vertical Datum**	43. GPS Accuracy	

44. Additional Information

Red bold font fields = Mandatory, Black font fields = Optional

- * Information required if Northing, Easting or Coordinate System data is recorded.
- ** Information required if Elevation or Vertical Datum data is recorded.

Sketch

MACP Inspection Form – Manhole Component Observation Section

1 = Mandatory Level 1 Inspection

2 = Mandatory Level 2 Inspection

Cover

45. Type (2) SOLID		46. Shape (2) C		47. Size (2) 25.5		48. Center Cover Size		49. Size Width (2)	
50. Cover Material (2) CAS			51. Hole Diameter (Vent) (2) N			52. Hole Number (2) 0		53. Bearing Surface Diameter (2) N	
54. Bearing Surface Width (2) N				55. Cover/Frame Fit (1,2) G				56. Cover Condition (1,2) SOUND	

Cover Insert

57. Insert Material (2)	58. Cover Insert Condition (2)
N	

Cover Adjustment Ring

59. Ring Type (1,2) N	60. Ring Material (2)	61. Ring Condition (1,2)	62. Ring Depth
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Frame

63. Frame Material (2) CAS	64. Bearing Surface Width (2) N	65. Bearing Surface Depth (2) N	66. Clear Opening Diam (2) N
67. Clear Opening Width (2) N	68. Frame Condition (1,2) SOUND	69. Seal Condition (2) SOUND	70. Offset Distance
71. Seal Inflow (2) N	72. Frame Depth		

Chimney

73. Chimney Present (2) Y	74. First Material (2) CR	75. Second Material	76. Chimney I/I	77. Clear Opening
78. Chimney Depth (2) N	79. Lining Interior P	80. Lining Exterior	81. Chimney Condition (1) SOUND	

Cone

82. Type (2) FT	83. Material (2) CR	84. Depth (2) N	85. Lining Interior P	86. Lining Exterior	87. Cone Condition (1) SOUND
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Wall

88. Wall Diameter (Length)	89. Wall by Size (Width)	90. Material (2) CR	91. Depth (2) N
92. Wall Lining Interior P	93. Wall Lining Exterior	94. Wall Condition (1) SOUND	

Bench

95. Bench Present (2) Y	96. Bench Material (2) CR	97. Bench Lining P	98. Bench Condition (1) SOUND
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Channel

99. Channel Installed (2)	100. Channel Material (2)	101.Type (2)	102. Exposure (2)	103. Channel Condition (1)
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Steps

0	104. Number (2)	105. Material (2)
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Additional Component Information

106. Additional Component Information
106A. Other Manhole Appurtenances

Pipe Connections

[illegible]

MACP Inspection Form - Manhole Component Details Continuation Section

1. Surveyed By (1,2)	5. Owner	11. Date (1,2)	13. Sheet Number	22. MH/Access Point No. (1,2)
Brian Garries	BP	20241009		40-36

[illegible]



PACP Inspection Form

Header Section

Red font fields = Mandatory, Black font fields = Optional



General Information

1. Surveyed by Brian Garries	2. Certificate No. P0035046-122021	3. Reviewed by	4. Reviewer Certificate No.
5. Owner BP	6. Customer	7. P/O Number	8. Work Order Number 1007494
9. Media Label	10. Project 2023 OWS	11. Date 20230822 YYYYMMDD	12. Time 14:22 HH:MM
13. Sheet Number 1	14. Weather 1	15. Pre-Cleaning L	16. Date Cleaned 20230822 YYYYMMDD
17. Flow Control B	18. Purpose of Survey F	19. Direction of Survey D	20. Inspection Technology Used CC
21. Inspection Status CI	22. Consequence of Failure	23. Pressure Value	

Location

24. Drainage Area	25. Pipe Segment Reference	26. Street (Name & Number) UNIT 20
27. City Blaine, WA	28. Location Code	29. Location Details

Pipe

30. Pipe Use PR	31. Height (Diameter) 12	32. Width -	33. Shape C
34. Material RCP	35. Lining Method	36. Coating Method	37. Pipe Joint Length 7.5
38. Total Length	39. Length Surveyed 90.9	40. Year Constructed YYYY	41. Year Renewed YYYY

Measurements

42. Upstream MH No. 40-78	43. Upstrm MH Rim to Invert	44. Upstrm MH Rim to Grade	45. Upstrm MH Grade to Invert
46. Upstream MH Northing*	47. Upstream MH Easting*	48. Upstream MH Elevation**	
49. Downstream MH No. 40-36	50. Downstream MH Rim to Invert	51. Downstream MH Rim to Grade	
52. Downstream MH Grade to Invert	53. Downstream MH Northing*	54. Downstream MH Easting*	
55. Downstream MH Elevation**	56. MH Coordinate System*	57. MH Vertical Datum**	58. GPS Accuracy
59. Additional Information			

*Entry required if Northing, Easting or Coordinate System data is recorded.

**Entry required if Elevation or Vertical Datum data is recorded.

Sketch

USMH	DSMH

Details Section

1. Surveyed by Brian Garries	5. Owner BP	11. Date 20231113	13. Sheet No. 2	42. Upstream MH No. 40-78	49. Downstream MH No. 40-36
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Details

[illegible]

Red font fields = Mandatory, Black font fields = Optional

MACP Inspection Form

Header Section

General Information

1. Surveyed By (1,2) Brian Garries	2. Certificate Number (1,2) P0035046-122021	3. Reviewed By	4. Reviewer Certificate No.
5. Owner BP	6. Customer	7. P/O Number	8. Work Order 1007494
9. Media Label	10. Project 2023 OWS	11. Date (1,2) YYYYMMDD 20230919	12. Time 16:06
13. Sheet Number (1,2) 1	14. Weather 1	15. Pre-Cleaning (2) L	16. Date Cleaned YYYYMMDD 20230919
17. Purpose of Survey (1,2) F	18. Inspection Level (1,2) 2	19. Inspection Status (1,2) RI	20. Consequence of Failure

Location

21. Drainage Area	22. MH/Access Point No. (1,2) 40-78	23. Street (1,2) UNIT 20	24. City (1,2) Blaine, WA
25. Location Code (2) Z	26. Surface Type (2) ASPHALT	27. Inflow Potential from Runoff	28. Location Details UNIT 20

Manhole

29. MH Use (2) PR	30. Access Type (1,2) AMH	31. Year Constructed YYYY	32. Year Renewed YYYY	33. Evidence of Surcharge (2) N
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Measurements

34. Rim to Invert (2) N	35. Rim to Grade (2) N	36. Grade to Invert (2) N	37. Rim to Grade Exposed
38. Northing*	39. Easting*	40. Elevation**	41. Coordinate System*
42. Vertical Datum**		43. GPS Accuracy	
44. Additional Information			

Red font fields = Mandatory, Black font fields = Optional

*Entry required if Northing, Easting or Coordinate System data is recorded.

**Entry required if Elevation or Vertical Datum data is recorded.

Sketch

MACP Inspection Form

Manhole Component Observation Section

Cover

45. Type (2) SOLID	46. Shape (2) C	47. Size (2) 25.5	48. Center Cover Size
49. Size Width (2) N	50. Cover Material (2) CAS	51. Hole Diameter (Vent) (2) N	52. Hole Number (2) 0
53. Bearing Surface Diameter (2) N	54. Bearing Surface Width (2) N	55. Cover/Frame Fit (2) G	56. Cover Condition (1,2) SOUND

Cover Insert

57. Insert Type (2) N	58. Cover Insert Condition (2) N
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Cover Adjustment Ring

59. Ring Type (1, 2) N	60. Ring Material (2) N	61. Ring Condition (1,2) N	62. Ring Height
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Frame

63. Frame Material (2) CAS	64. Bearing Surface Width (2) N	65. Bearing Surface Depth (2) N	66. Clear Opening Diam (2) N
67. Clear Opening Width (2) N	68. Frame Condition (1,2) SOUND	69. Seal Condition (2) SOUND	70. Offset Distance (2) 0
71. Seal Inflow (2) N	72. Frame Depth		

Chimney

73. Chimney Present (2) Y	74. First Material (2) CR	75. Second Material	76. Chimney I/I
77. Clear Opening	78. Chimney Depth (2) N	79. Lining Interior	80. Lining Exterior
			81. Chimney Condition (1) SOUND

Cone

82. Type (2) FT	83. Material (2) CR	84. Depth (2) N
85. Lining Interior	86. Lining Exterior	87. Cone Condition (1) SOUND

Wall

88. Wall Diameter (Length)	89. Wall by Size (Width)	90. Material (2) CR	91. Depth (2) N
92. Wall Lining Interior	93. Wall Lining Exterior	94. Wall Condition (1) D	

Bench

95. Bench Present (2) Y	96. Bench Material (2) CR	97. Bench Lining	98. Bench Condition (1) SOUND
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Channel

99. Channel Installed (2) N	100. Channel Material (2)	101. Type (2) NONE	102. Exposure (2)	103. Channel Condition (1)
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Steps

104. Number (2) 0	105. Material (2)
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Additional Component Information

106. Additional Component Information INFILTRATION AT WALL JOINT

Pipe Connections

107. Pipe No. (2)	108. Clock Pos (2)	109. Rim to Invert (2)	110. Direction (2)	111. Material (2)	112. Shape (2)	113. Height (Diam) (2)	114. Width (2)	115. Cond (2)	116. Seal Cond (2)	117. Pipe Type (2)	118. Struct ID	119. Comment
1	06	N	OUT	RCP	C	12	-	S	S	GR		
2	08	N	IN	CAS	C	10	-	S	S	GR		
3	11	N	IN	CAS	C	10	-	S	S	GR		
4	02	N	IN	CAS	C	8	-	B	S	GR		BROKEN EDGES

1= Mandatory Level 1 Inspection Required, 2 = Mandatory Level 2 Inspection Required

Manhole Component Defect Section

1. Surveyed By (1,2) Brian Garries	5. Owner BP	11. Date (1,2) 20231113 YYYYMMDD	13. Sheet Number (1,2) 3	22. MH/Access Point No. (1,2) 40-78
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[illegible]

1= Mandatory Level 1 Inspection Required, 2 = Mandatory Level 2 Inspection Required

LACP Inspection Form

Header Section

General Information

1. Surveyed by	2. Certificate No.	3. Reviewed by	4. Reviewer Certificate No.
5. Owner	6. Customer	7. P/O Number	8. Work Order Number
9. Media Label	10. Project	11. Date YYYYMMDD	12. Time HH:MM
14. Weather	15. Pre-Cleaning	16. Date Cleaned YYYYMMDD	17. Purpose of Survey
18. Direction of Survey	19. Inspection Technology Used	20. Inspection Status	
21. Consequence of Failure		22. Pressure Value	

Location

23. Drainage Area	24. Pipe Segment Reference	25. Lateral Segment Reference	
26. Street (Name & Number)	27. City	28. Location Code	29. Location Details

Lateral

30. Pipe Use	31. Size	32. Material	33. Lining Method	34. Total Length
35. Length Surveyed	36. Year Constructed YYYY	37. Year Renewed YYYY	38. Property Line	

Measurements

39. Access Point ID No.	40. Tap Location	41. Rim to Invert	42. Access Pt. Northing*
43. Access Pt. Easting*	44. Access Pt. Elevation**		45. Coordinate System*
46. Vertical Datum**	47. GPS Accuracy	48. Downstream Manhole ID No.	
49. Upstream Manhole ID No.	50. Start Manhole	51. Additional Information	

*Entry required if Northing, Easting or Coordinate System data is recorded.

**Entry required if Elevation or Vertical Datum data is recorded.

Details Continuation Section[illegible]

Red font fields = Mandatory, Black font fields = Optional



PACP Inspection Form

Header Section

Red font fields = Mandatory, Black font fields = Optional



General Information

1. Surveyed by Brian Garries	2. Certificate No. P0035046-122021	3. Reviewed by	4. Reviewer Certificate No.
5. Owner BP	6. Customer	7. P/O Number	8. Work Order Number 1007494
9. Media Label	10. Project 2023 OWS	11. Date 20230906	12. Time 14:52
13. Sheet Number 1	14. Weather 1	15. Pre-Cleaning N	16. Date Cleaned
17. Flow Control	18. Purpose of Survey F	19. Direction of Survey D	20. Inspection Technology Used CC
21. Inspection Status CI	22. Consequence of Failure	23. Pressure Value	

Location

24. Drainage Area	25. Pipe Segment Reference	26. Street (Name & Number) UNIT 12
27. City Blaine, WA	28. Location Code	29. Location Details

Pipe

30. Pipe Use PR	31. Height (Diameter) 8	32. Width -	33. Shape C
34. Material CAS	35. Lining Method	36. Coating Method	37. Pipe Joint Length
38. Total Length	39. Length Surveyed 11.5	40. Year Constructed YYYY	41. Year Renewed YYYY

Measurements

42. Upstream MH No. 40-32	43. Upstrm MH Rim to Invert	44. Upstrm MH Rim to Grade	45. Upstrm MH Grade to Invert
46. Upstream MH Northing*	47. Upstream MH Easting*	48. Upstream MH Elevation**	
49. Downstream MH No. 40-34	50. Downstream MH Rim to Invert	51. Downstream MH Rim to Grade	
52. Downstream MH Grade to Invert	53. Downstream MH Northing*	54. Downstream MH Easting*	
55. Downstream MH Elevation**	56. MH Coordinate System*	57. MH Vertical Datum**	58. GPS Accuracy
59. Additional Information DISTANCE COUNTER INACCURATE			

*Entry required if Northing, Easting or Coordinate System data is recorded.

**Entry required if Elevation or Vertical Datum data is recorded.

Sketch

USMH	DSMH

Details Section

Details

Red font fields = Mandatory, Black font fields = Optional

MACP Inspection Form

Header Section

General Information

1. Surveyed By (1,2)	2. Certificate Number (1,2)	3. Reviewed By	4. Reviewer Certificate No.
5. Owner	6. Customer	7. P/O Number	8. Work Order
9. Media Label	10. Project	11. Date (1,2) YYYYMMDD	12. Time
13. Sheet Number (1,2)	14. Weather	15. Pre-Cleaning (2)	16. Date Cleaned YYYYMMDD
17. Purpose of Survey (1,2)	18. Inspection Level (1,2)	19. Inspection Status (1,2)	20. Consequence of Failure

Location

21. Drainage Area	22. MH/Access Point No. (1,2)	23. Street (1,2)	24. City (1,2)
25. Location Code (2)	26. Surface Type (2)	27. Inflow Potential from Runoff	28. Location Details

Manhole

29. MH Use (2)	30. Access Type (1,2)	31. Year Constructed YYYY	32. Year Renewed YYYY	33. Evidence of Surcharge (2)
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Measurements

34. Rim to Invert (2)	35. Rim to Grade (2)	36. Grade to Invert (2)	37. Rim to Grade Exposed
38. Northing*	39. Easting*	40. Elevation**	41. Coordinate System*
42. Vertical Datum**		43. GPS Accuracy	
44. Additional Information			

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*Entry required if Northing, Easting or Coordinate System data is recorded.

**Entry required if Elevation or Vertical Datum data is recorded.

Sketch

MACP Inspection Form

Manhole Component Observation Section

Cover

45. Type (2)	46. Shape (2)	47. Size (2)	48. Center Cover Size
49. Size Width (2)	50. Cover Material (2)	51. Hole Diameter (Vent) (2)	52. Hole Number (2)
53. Bearing Surface Diameter (2)	54. Bearing Surface Width (2)	55. Cover/Frame Fit (2)	56. Cover Condition (1,2)

Cover Insert

57. Insert Type (2)	58. Cover Insert Condition (2)
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Cover Adjustment Ring

59. Ring Type (1, 2)	60. Ring Material (2)	61. Ring Condition (1,2)	62. Ring Height
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Frame

63. Frame Material (2)	64. Bearing Surface Width (2)	65. Bearing Surface Depth (2)	66. Clear Opening Diam (2)
67. Clear Opening Width (2)	68. Frame Condition (1,2)	69. Seal Condition (2)	70. Offset Distance (2)
71. Seal Inflow (2)		72. Frame Depth	

Chimney

73. Chimney Present (2)	74. First Material (2)	75. Second Material	76. Chimney I/I
77. Clear Opening	78. Chimney Depth (2)	79. Lining Interior	80. Lining Exterior
81. Chimney Condition (1)			

Cone

82. Type (2)	83. Material (2)	84. Depth (2)
85. Lining Interior	86. Lining Exterior	87. Cone Condition (1)

Wall

88. Wall Diameter (Length)	89. Wall by Size (Width)	90. Material (2)	91. Depth (2)
92. Wall Lining Interior	93. Wall Lining Exterior	94. Wall Condition (1)	

Bench

95. Bench Present (2)	96. Bench Material (2)	97. Bench Lining	98. Bench Condition (1)
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Channel

99. Channel Installed (2)	100. Channel Material (2)	101. Type (2)	102. Exposure (2)	103. Channel Condition (1)
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Steps

104. Number (2)	105. Material (2)
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Additional Component Information

106. Additional Component Information

Pipe Connections

107. Pipe No. (2)	108. Clock Pos (2)	109. Rim to Invert (2)	110. Direction (2)	111. Material (2)	112. Shape (2)	113. Height (Diam) (2)	114. Width (2)	115. Cond (2)	116. Seal Cond (2)	117. Pipe Type (2)	118. Struct ID	119. Comment

1 = Mandatory Level 1 Inspection Required, 2 = Mandatory Level 2 Inspection Required

Manhole Component Defect Section

1. Surveyed By (1,2)	5. Owner	11. Date (1,2) YYYYMMDD	13. Sheet Number (1,2)	22. MH/Access Point No. (1,2)
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[illegible]

1= Mandatory Level 1 Inspection Required, 2 = Mandatory Level 2 Inspection Required

LACP Inspection Form

Header Section

General Information

1. Surveyed by	2. Certificate No.	3. Reviewed by	4. Reviewer Certificate No.
5. Owner	6. Customer	7. P/O Number	8. Work Order Number
9. Media Label	10. Project	11. Date YYYYMMDD	12. Time HH:MM
14. Weather	15. Pre-Cleaning	16. Date Cleaned YYYYMMDD	17. Purpose of Survey
18. Direction of Survey	19. Inspection Technology Used	20. Inspection Status	
21. Consequence of Failure		22. Pressure Value	

Location

23. Drainage Area	24. Pipe Segment Reference	25. Lateral Segment Reference	
26. Street (Name & Number)	27. City	28. Location Code	29. Location Details

Lateral

30. Pipe Use	31. Size	32. Material	33. Lining Method	34. Total Length
35. Length Surveyed	36. Year Constructed YYYY	37. Year Renewed YYYY	38. Property Line	

Measurements

39. Access Point ID No.	40. Tap Location	41. Rim to Invert	42. Access Pt. Northing*
43. Access Pt. Easting*	44. Access Pt. Elevation**		45. Coordinate System*
46. Vertical Datum**	47. GPS Accuracy	48. Downstream Manhole ID No.	
49. Upstream Manhole ID No.	50. Start Manhole	51. Additional Information	

*Entry required if Northing, Easting or Coordinate System data is recorded.

**Entry required if Elevation or Vertical Datum data is recorded.

Details Continuation Section[illegible]

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