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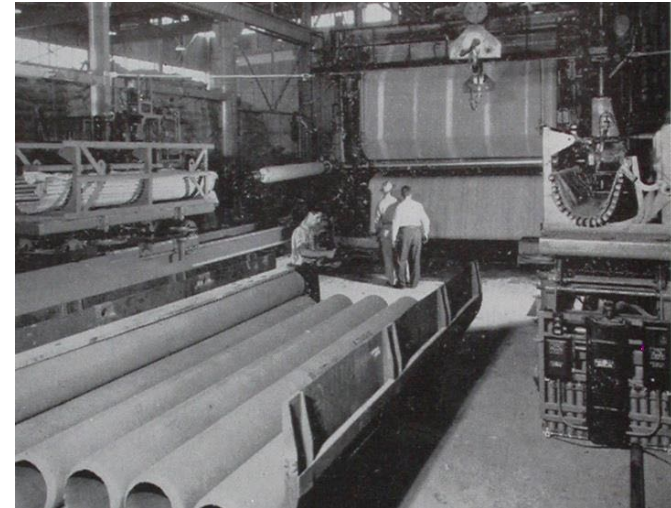
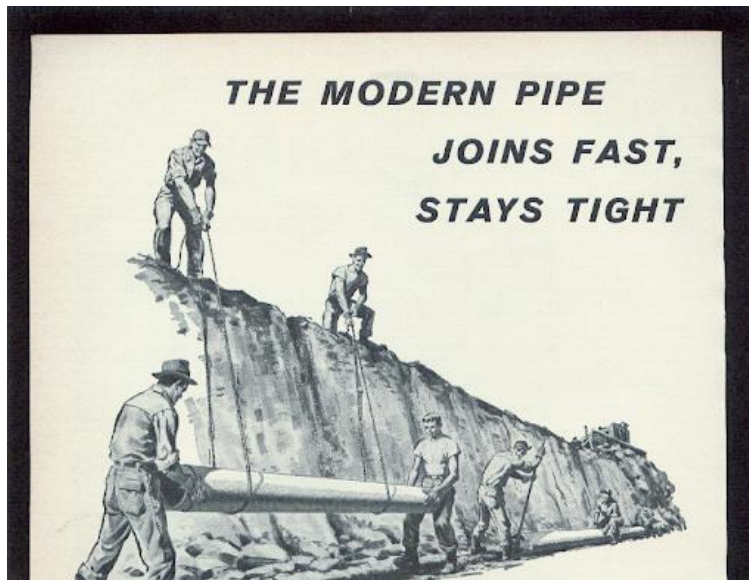
# Testing Methods for Asbestos Cement Pipe (yes there are ACP sewer lines)

**Presented to:**  
SCAP Collection Systems Committee  
Irvine, CA

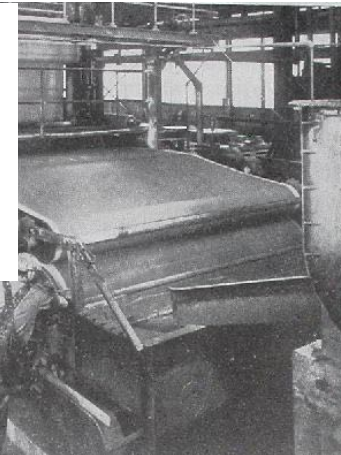
**Presented By:**  
Phil Giori, ENV SP  
Dudek

**DUDEK**

# History of AC Pipe



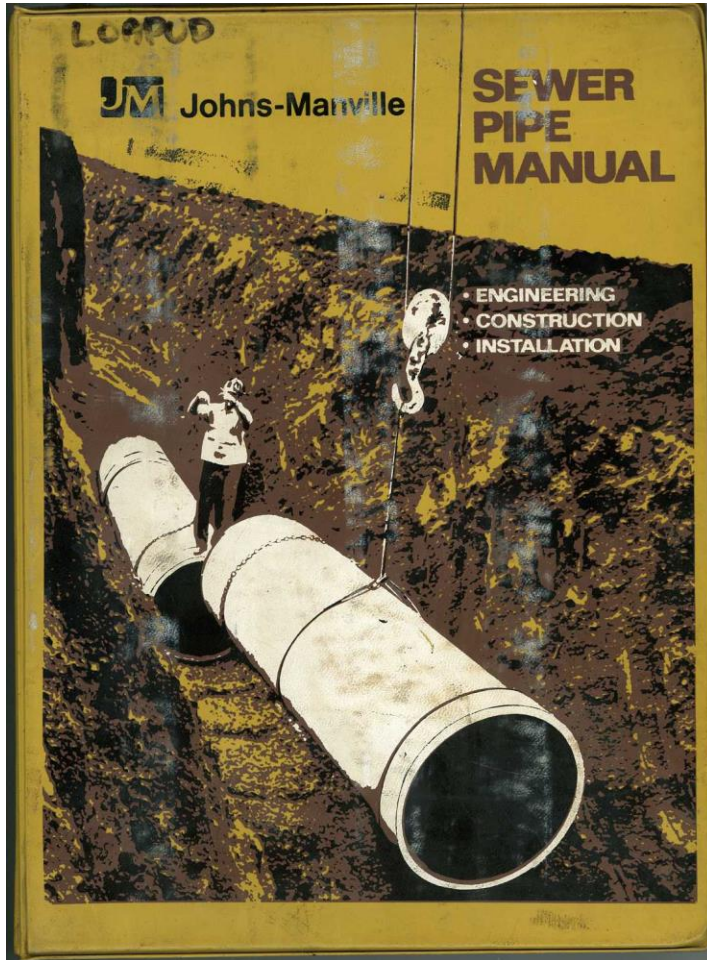
“For gravity sewer systems, ‘K&M’ Asbestos-Cement non-pressure pipe is the modern answer to the need for low-cost, permanent, water-tight connections”



# Failure Modes of AC Pipe



# Who has AC Pipe?



# Test Methods Overview



Phenolphthalein Dye Test



Acoustic Velocity Test



SEM-EDX Test



Crushing Strength Test



Hardness Test

# Phenolphthalein Dye Test

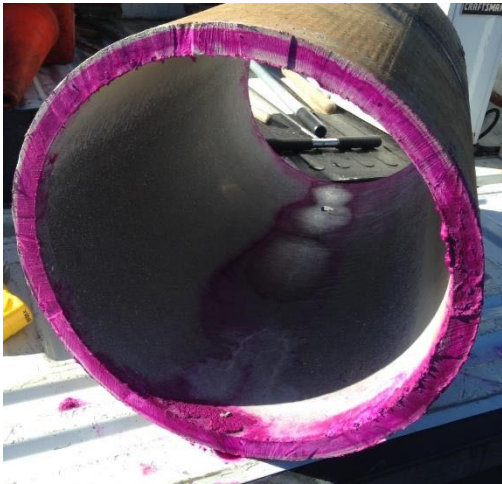
No color denotes  
potential degradation

Magenta denotes  
strong pipe wall

**Highly Conservative**



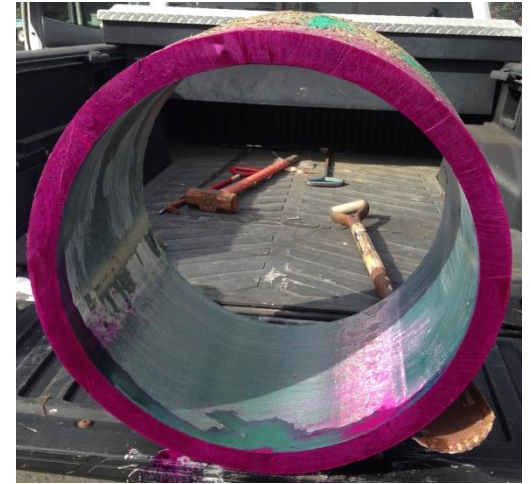
# Effluent Outfall Condition Assessment Results



Sample #1



Sample #2



Sample #3



Sample #4



Sample #5



Sample #6

# Hardness Testing

**Test on Pipe  
Cross Section**

**Durometer Measures  
Relative Hardness  
(Scale 0-100)**





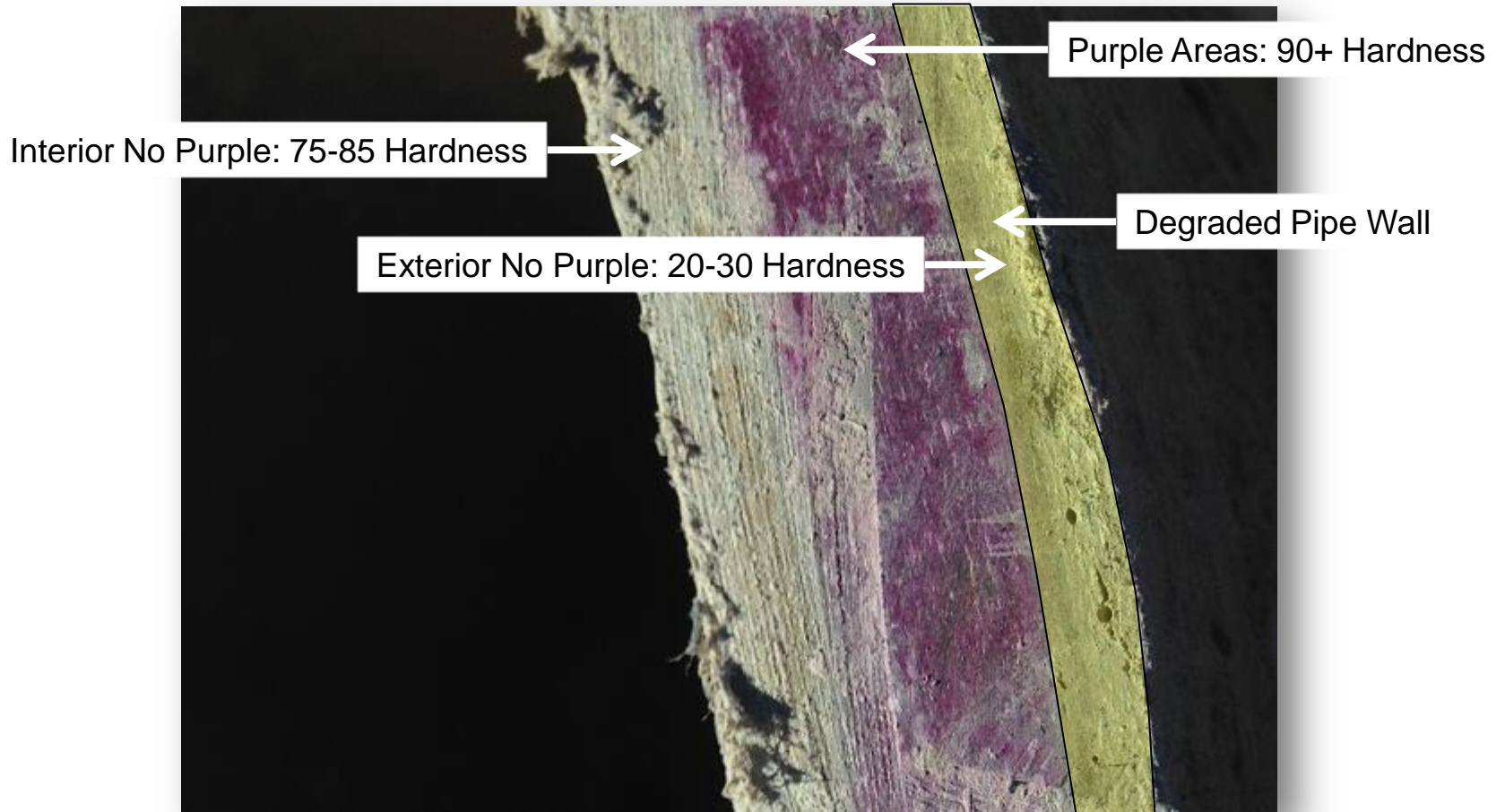
# Hardness Testing

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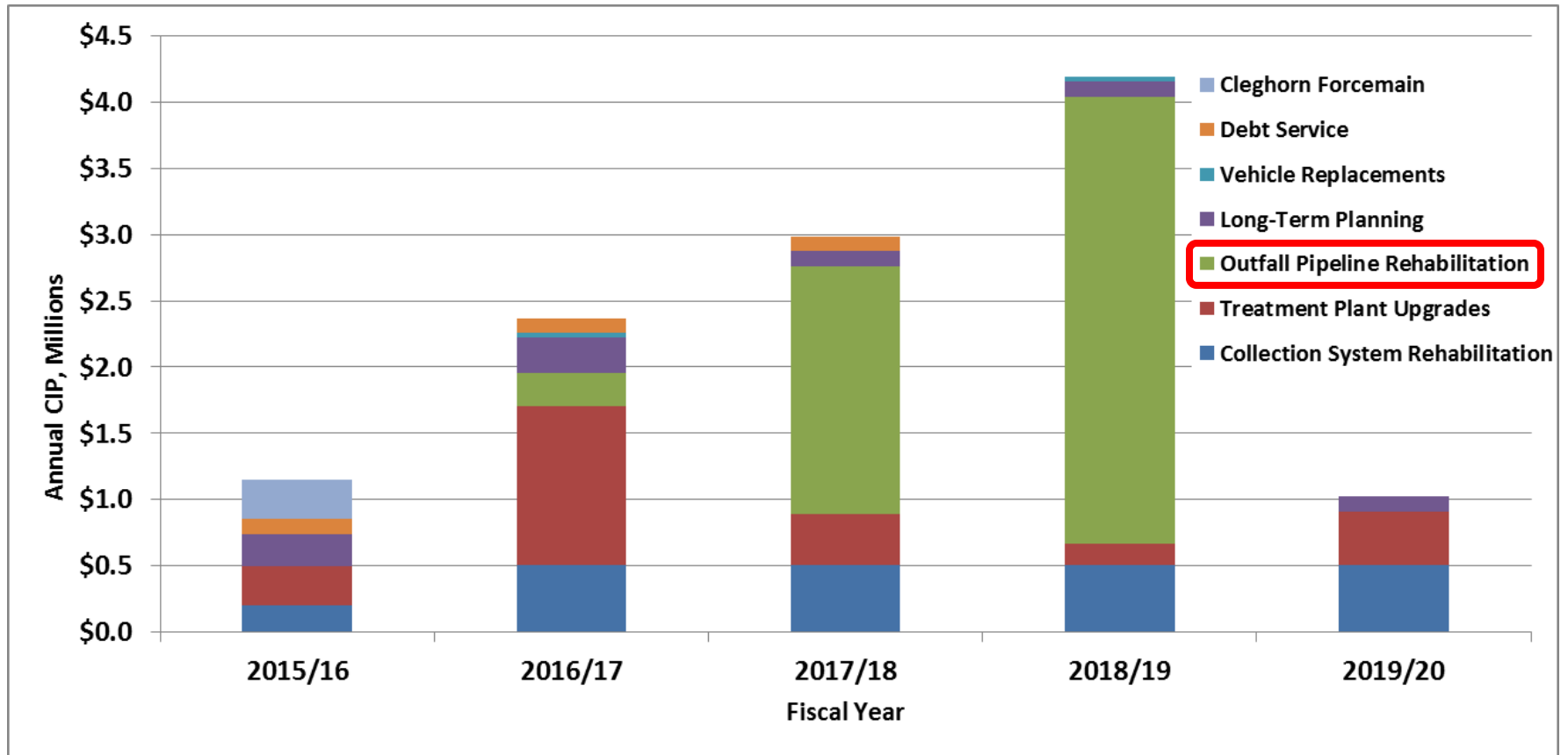


# Effluent Outfall Condition Assessment

Sample #1



# Cost/Savings Potential



# Questions?

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We talked about...

- History of AC Pipe
- Failure Modes of AC Pipe
- Testing Methods for AC Pipe
- Phenolphthalein dye test
- Hardness test
- Cost/Savings potential

