Jacobs Challenging today. Reinventing tomorrow.

City of Cornwall – Fire Hall #2 Remediation Proposal

Nouryon Chemicals LLC

August 17, 2020

Agenda

- Introduction
- Project Background
- Planned Remediation
- Biosparge System
- Subslab Depressurization System
- Next Steps

Project Background

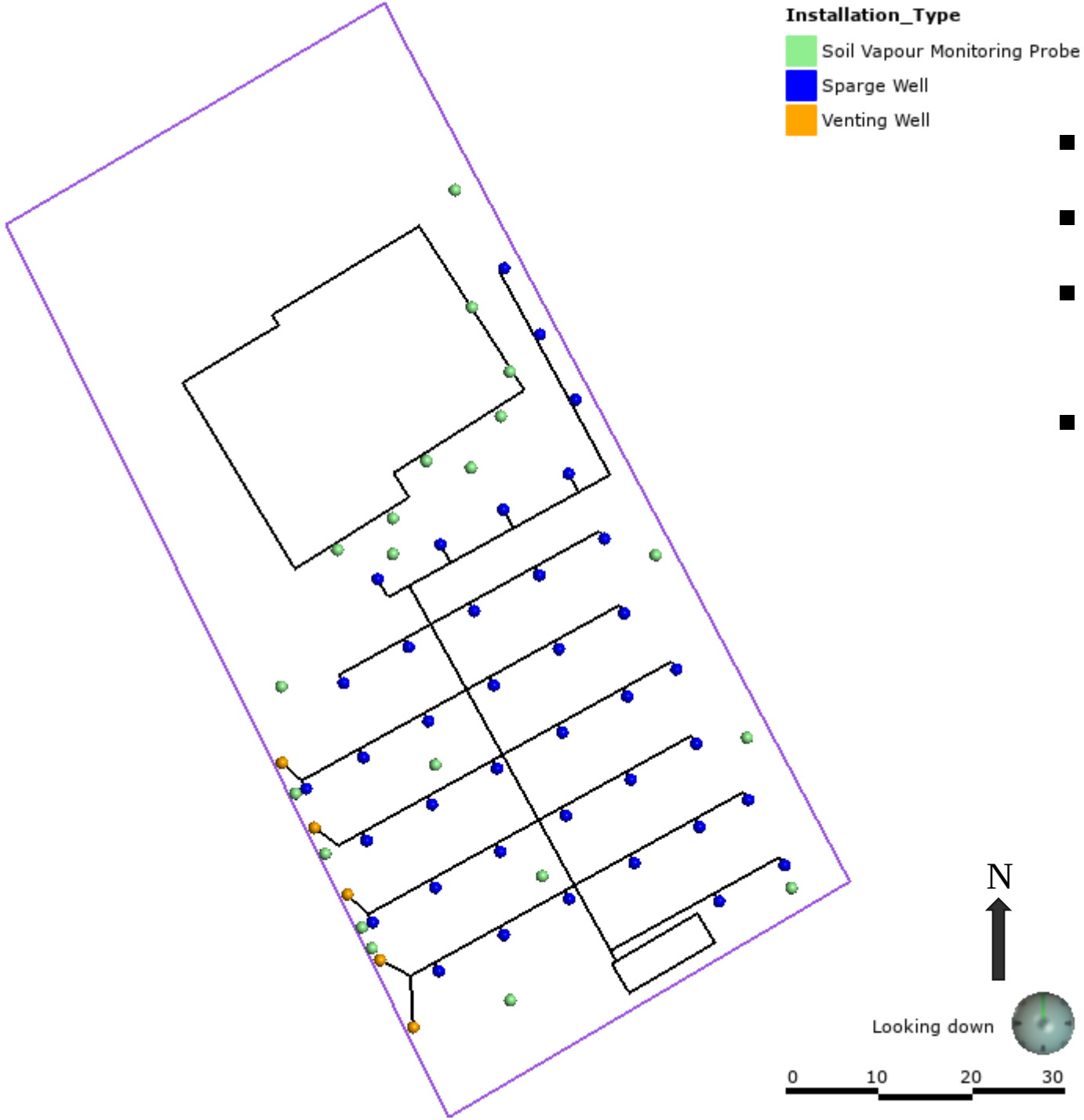
- Actions driven by Ministry of the Environment Conservation and Parks (MECP) based on:
  - Elevated contaminant concentrations from historical operations
    - 1,1-dichloroethylene and vinyl chloride
  - Presence of closed landfill with current ECA permit on Nouryon property
- Voluntary response from Nouryon to tasks requested by MECP
- Risk assessments to determine required remedial measures to prevent adverse impact
  - RA for Fire Hall property completed in June 2017 and approved by MECP in December 2017
- Nouryon completes semi-annual groundwater sampling events and annual reporting

Planned Remediation on Fire Hall property

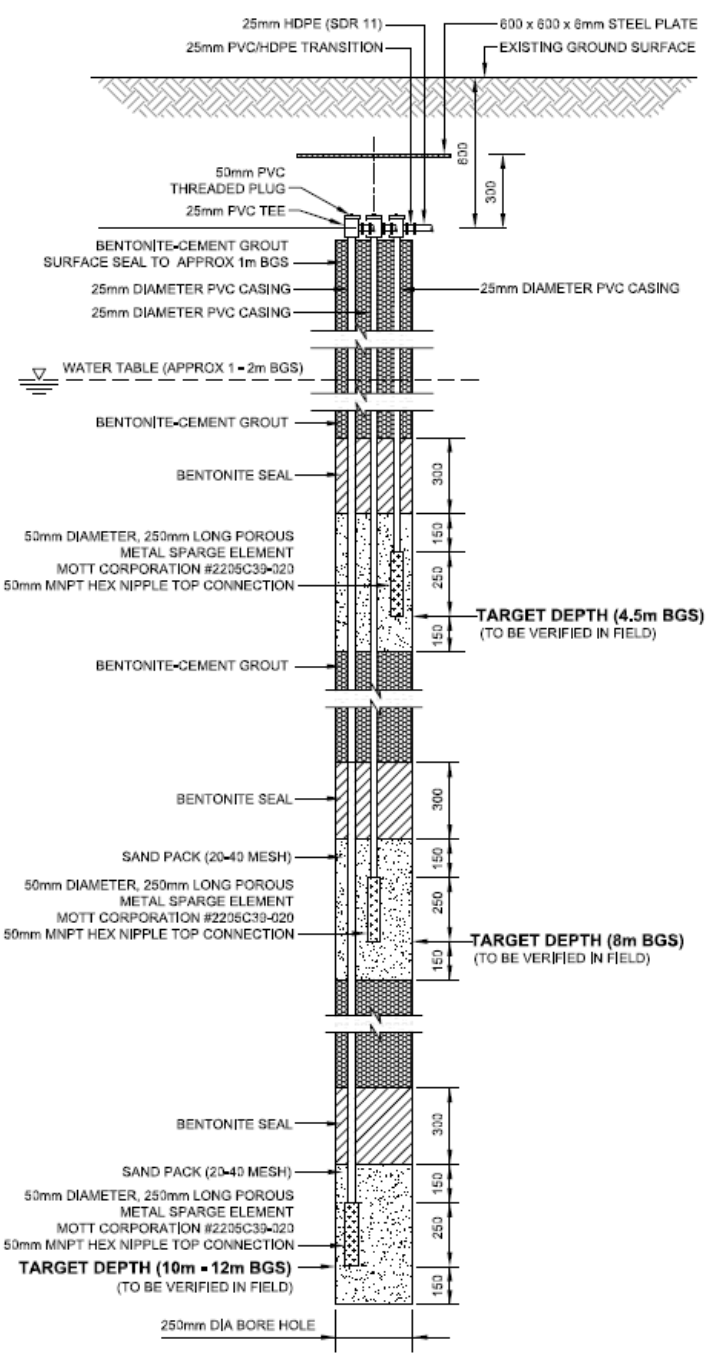
- Remedial Objectives
  - Remediate 1,1-dichloroethylene and vinyl chloride concentrations below the O.Reg. 153/04 (as amended) Table 3 Groundwater Standards
  - Remove the potential vapour intrusion risk to fire hall building
    - New conditions identified in May 2020
    - Potential biosparge system-related effects

- Planned technologies to achieve objectives
  - Biosparge System
  - Subslab Depressurization System

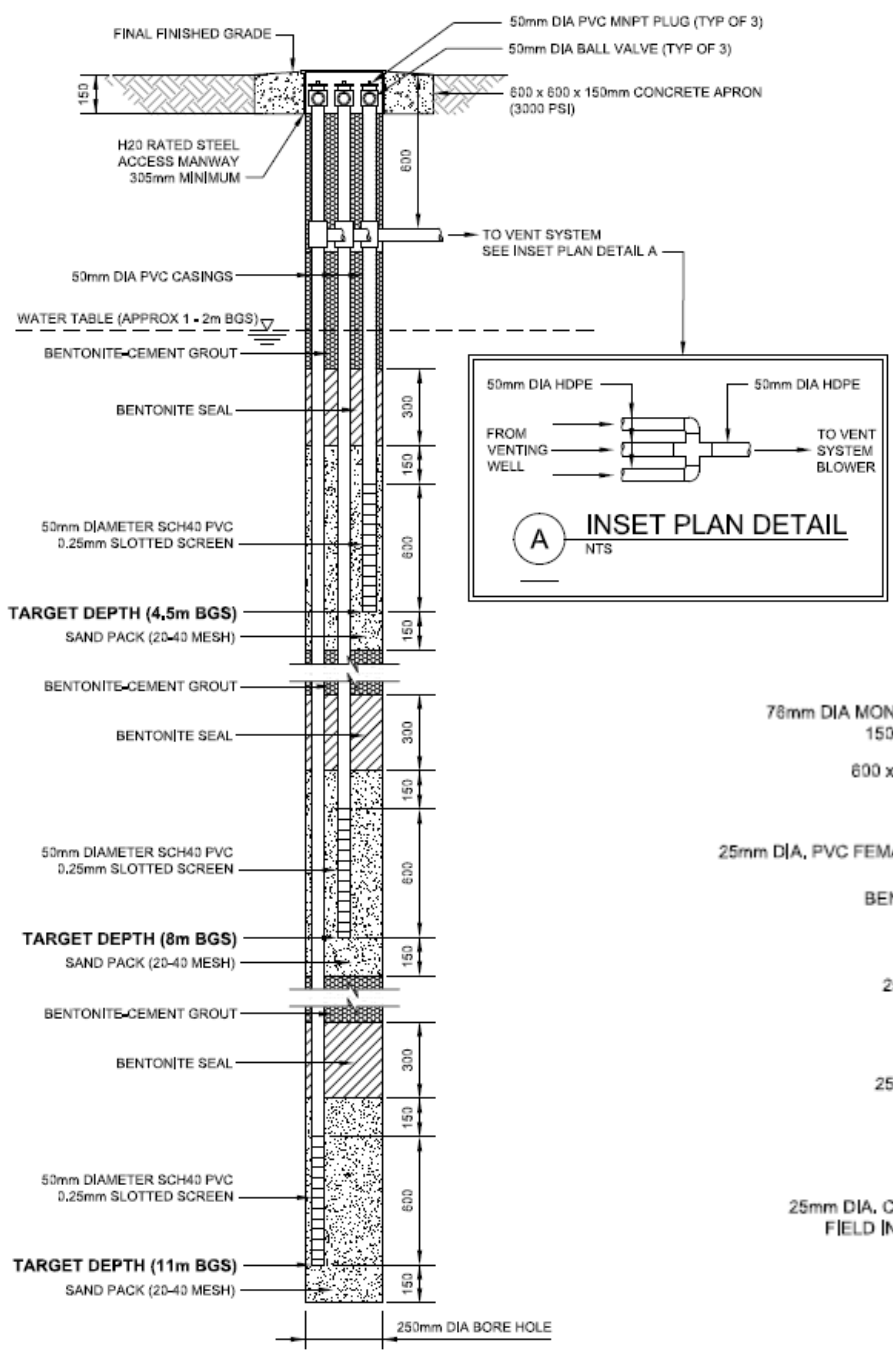
Biosparge System



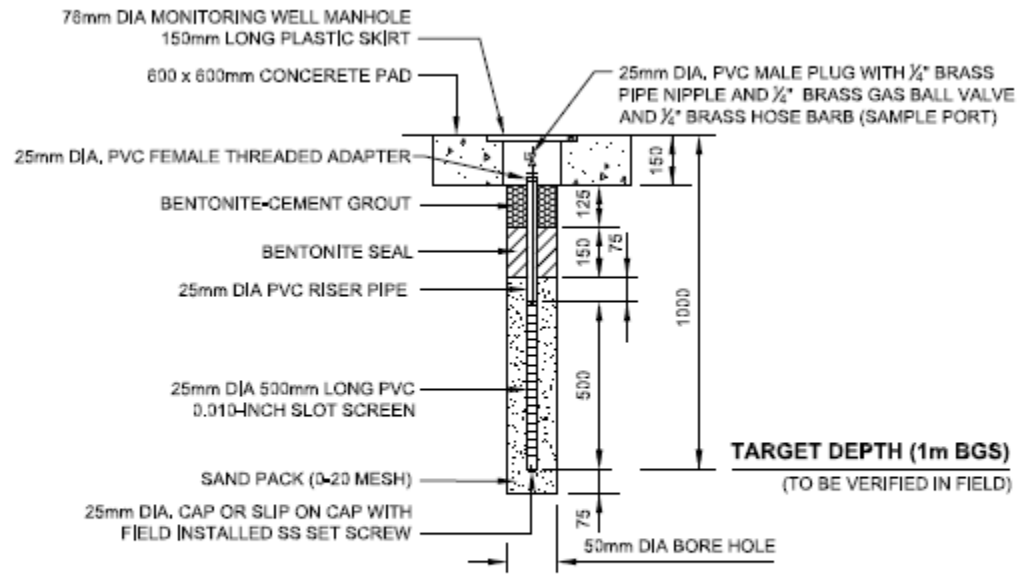
- 114 Biosparge Wells
- 5 Vapour Venting Wells
- 20 Soil Vapour Monitoring Probes
- 5,337 metres of buried conveyance piping



1 BIOSPARGE WELL DETAIL
NTS
C-02



2 VENTING WELL DETAIL
NTS
C-02



3 VAPOUR MONITORING POINT DETAIL
NTS
C-02

Biosparge System Construction

- Drilling program
  - 2 month duration
  - 1 Sonic drilling rig, support crew and Jacobs field geologist
- Biosparge system installation
  - 2 month construction duration to commence once drilling completed
  - Remediation contractors will trench and install piping, and complete wellhead connections.
  - All wellhead connections will be completed in subsurface vaults, with all vaults buried following installation and ground surface rehabilitated to either grass or asphalt.
  - All piping will be buried and trenches will be backfilled and ground surface rehabilitated to either grass or asphalt.
  - Temporary remediation system enclosure placement, power drop, mechanical and electrical connections, field testing.

Biosparge System Operation

- Expected operation duration of 5 years
- 26 monitoring wells to be sampled semi-annually during system operation
- Daily monitoring during initial startup
- Quarterly maintenance on remediation enclosure and equipment
- Quarterly vapour sampling from soil vapour monitoring probes
- Quarterly vapour sampling from the vapour phase carbon system at the remediation enclosure
- System decommissioning to follow once site remediation objectives met.

Subslab Depressurization System

Subslab Probe for Pressure Monitoring
Subslab Soil Vapor Sampling Location
VIMS SSD Test Node

Room Division
Building Footprint
Site Boundary

0 1 2 3 4 5
Metres

Notes:
1. Background Imagery: World Aerial ESRI 2020.

Proposed Subslab Probe and SSD Test Node Locations
Nouryon Chemicals LLC
Fire Hall Property VIMS System
Second Street East, Cornwall, Ontario

Subslab Depressurization System Construction

- SSDS field work and detailed design
  - Field work, 2 weeks
    - 9 subslab borings for vapour pin installation
    - 4 subslab borings for subslab depressurization test nodes
    - Air flow testing and subslab vapour sampling
  - Detailed design, 2 months

- SSDS system installation
  - 2 month construction duration
  - Remediation contractors will horizontal drill under building and install piping.
  - Air blower unit connected to piping to be installed on roof of fire hall building
  - Will operate for the duration of the biosparge system operation (~5 years)
  - Operation and maintenance program will be developed as part of the detailed design

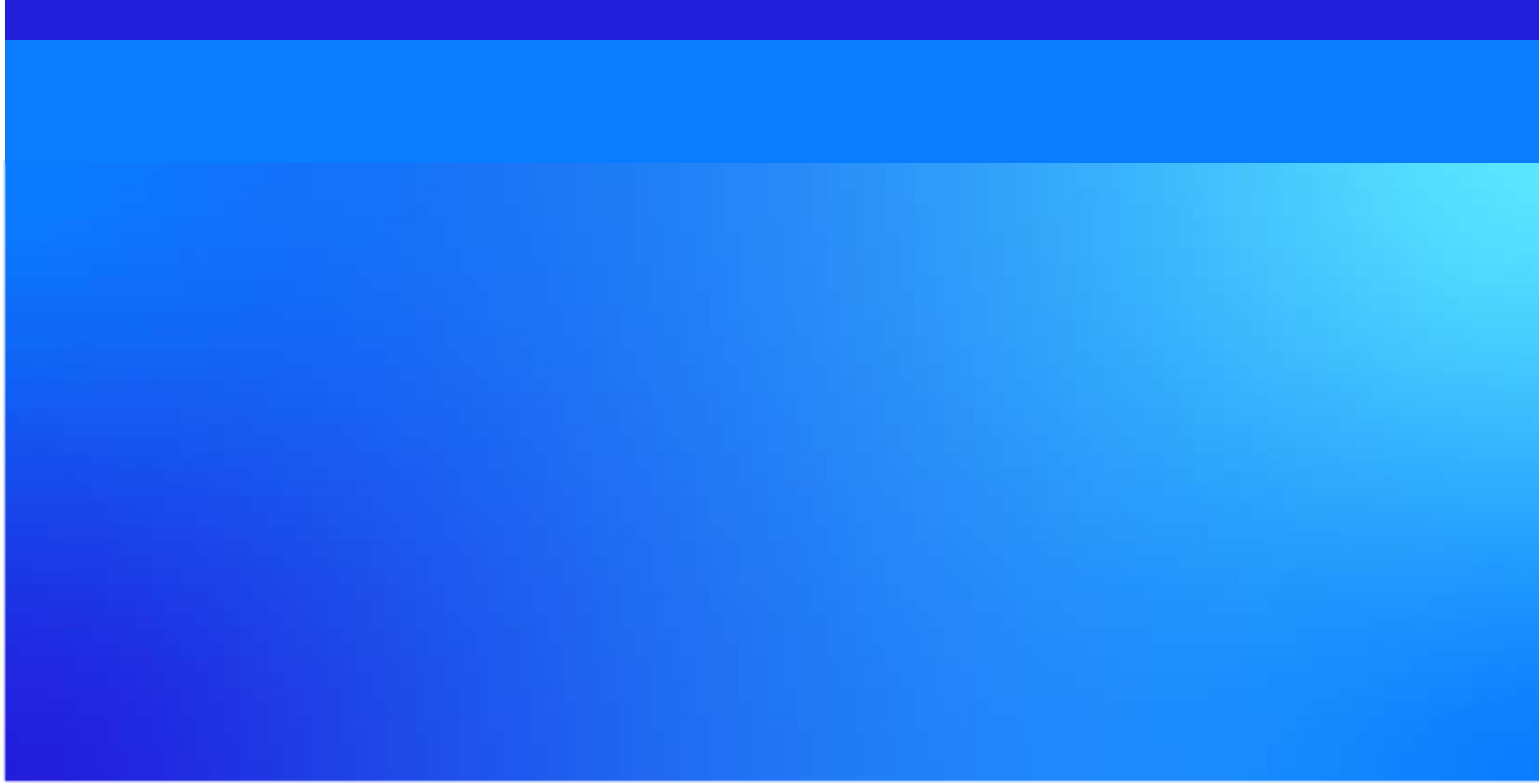
Next Steps

Step	
Gain acceptance from MECP and City of Cornwall for remedial design	
Receive property access approval from City of Cornwall	
Tender and award remedial construction	
Permitting	
Drill biosparge wells	
Remediation contractor mobilization to site for construction	
Remediation operation	
System decommissioning	

Copyright Notice

Important

The material in this presentation has been prepared by Jacobs®.



Jacobs

Challenging today.
Reinventing tomorrow.