OMC - NORTH DITCH BYPASS

Z-2-3

REMEDIAL ACTION OBJECTIVES:

- Provide complete runoff and drainage collection.
- Provide diversion away from the contaminated areas:
  - Crescent Ditch
  - Oval Lagoon
  - North Ditch
  - Covered Landfill Areas
- Remove and dispose any contaminated soil (containing >50 mg/kg PCB) from the areas of remedial action so as to eliminate the future clean-up requirements in those areas.
- Provide remedial action which will not interfere with any future site clean-up actions in adjacent areas.
- Use technically feasible remedial actions and proven technologies.
- Evaluate each alternative utilizing site specific constraints:
  - PCB contaminant levels
  - Hydrogeologic conditions
  - Existing structures, utility lines, etc.
  - Topographic constraints

ALTERNATIVE 1: CENTRAL PIPELINE ROUTING

Components:

1) Submerged gravity pipeline running along the railroad spur in the central portion of the OMC property carrying drainage from the following areas:

   - Existing 36"ø RCP storm drain entering site

   - Surface areas south of Crescent Ditch and the parking lot

   - Roof drains

   - Regraded surface areas north of Crescent Ditch and west of Oval Lagoon.

2) Elevated curb and drainage swale on the northern end of the parking lot to capture and direct surface runoff toward Lake Michigan.

3) Drainage swale, ditch or pipe on the northern side of the North Ditch capturing runoff from North Shore Sanitary District property, directing toward Lake Michigan.

Constraints:

1) Available soil boring data: (sparse data)

   - North of the cutoff wall, no soil borings or sediment cores (past or present) were sampled. Since the cutoff wall was constructed after contamination began and since the cutoff wall (sheet piling) doesn't extend into the clay layer, contamination north of the ditch is expected.

   - Four past borings were sampled along the central route of the proposed pipeline adjacent to the railroad, showing little or no contamination ($<$ 3 mg/kg PCB) below 5' from the surface.

2) Construction north of the North Ditch may require additional sampling of the soil to determine contaminant levels and may require excavation of potentially contaminated areas ($>$ 50 mg/kg PCB in soil).

3) Institutional constraints of pipeline running through central portion of the site.

4) Pipe size may inhibit usefulness of alternative.

ALTERNATIVE 2: CENTRAL AND SOUTHERN PIPELINE ROUTING

COMPONENTS:

1. Submerged gravity pipeline running along the railroad spur (same as Alternative 1) carrying drainage from the following areas:

   - existing 36" ø RCP storm drain.
   - surface areas south of Crescent Ditch.
   - regraded surface areas north of Crescent Ditch and west of Oval Lagoon.

2. Submerged gravity pipeline running south of the buildings carrying roof drainage to Lake Michigan.

3. Parking lot drainage (same as Alternative 1).

4. Drainage north of the North Ditch (same as Alternative 1).

CONSTRAINTS:

The same construction and soil boring data constraints exist as are present with Alternative 1.

ALTERNATIVE 3: FORCE MAIN DRAINAGE NORTH OF EXISTING DITCH

COMPONENTS:

1. Submerged gravity feed pipelines and a pump station with a force main carrying drainage along the sheet piling north of the North Ditch. The drainage areas feeding this pipeline include:

   - existing 36" ø RCP storm drain entering site.

   - surface areas north and south of the Crescent Ditch.

   - roof drains.

2. Parking lot drainage (same as Alternative 1).

CONSTRAINTS:

The same construction and soil boring data constraints exist north of the main ditch as those presented with Alternative 1.

ALTERNATIVE 4: NORTH DITCH EXCAVATION AND GRAVITY PIPELINE

COMPONENTS:

1. Submerged pipeline bypassing the Crescent Ditch and Oval Lagoon ending at the North Ditch, carrying drainage from the following areas:

   - 36" ø storm drain.
   - roof drainage.

2. Regraded surface runoff from areas north and south of the Crescent Ditch.

3. Excavate contaminated soils from the North Ditch (levels > 50 mg/kg excavated).

   - excavate trench ≈ 18' wide and ≈15' deep along the "narrow portion" of the North Ditch (1330' length).

   - excavate trench ≈ 60' wide and ≈ 15' deep along the eastern portion of the North Ditch (410' length to the wood bridge).

   - prior to excavation, drive existing sheet piling with extension into confining clay layer (additional 5'-8' in depth) and construct sheet piling isolation on the southern side of North Ditch. Excavation will take place between sheet piling boundaries.

4. Backfill the excavated areas and construction of the concrete drainage swale or gravity pipeline (with submerged effluent) running into Lake Michigan.

5. Parking lot drainage (same as Alternative 1).

CONSTRAINTS:

1. Construction problems with ditch excavation and ground water inflow.

2. Existing power line pole foundations (next to ditch).

3. Head problems necessitate submerged outfall to the lake.

ALTERNATIVE 5: NORTH DITCH EXCAVATION AND FORCE MAIN

COMPONENTS:

1. Crescent Ditch bypass (same as Alternative 4).
2. Regraded surface runoff (same as Alternative 4).
3. North Ditch excavation (same as Alternative 4).
4. Construction of pump station and force main to provide enough head for above surface outfall into Lake Michigan.
5. Parking lot drainage (same as Alternative 1).

CONSTRAINTS:

The constraints are the same as those in Alternative 4.