

Velsicol Former Plant Site

UPDATE

NAPL/DBCP Area 2

In-Situ Thermal Treatment
Remedial Design Planning

May 16, 2018

ISTT AREA 1

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- ▶ Soil temperature on average approximately 65 °C
- ▶ On schedule to meet 100 °C in 180 days
- ▶ Recovered over 400 pounds volatile organic compounds in vapor phase
- ▶ More electricity usage and carbon usage

Multi-phase Extraction Wells

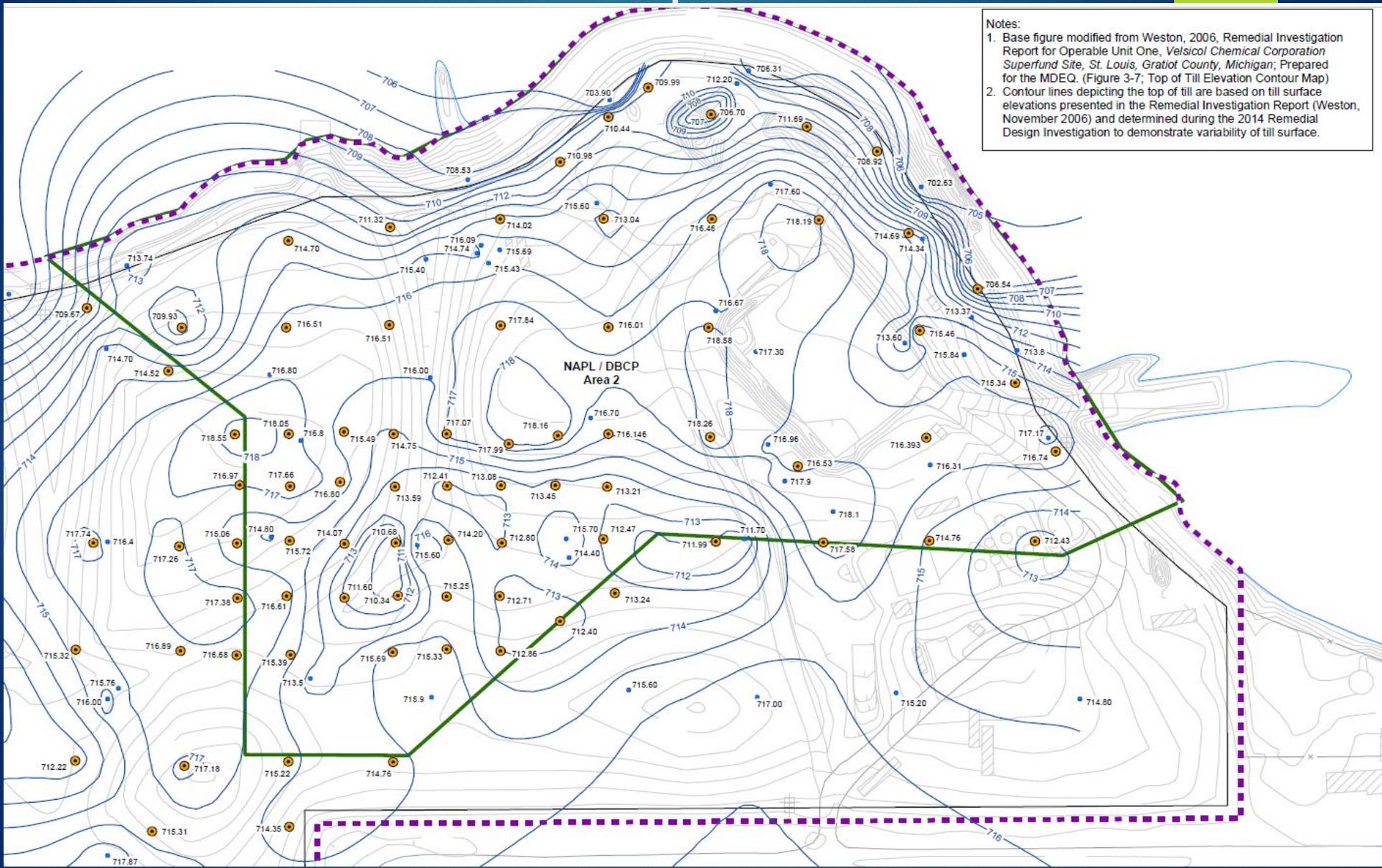
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ISTT AREA 2

- ▶ Previously presented sampling results to CAG
- ▶ Began pre-design sampling in 2014
- ▶ Final report February 2015
- ▶ Three criteria used to define NAPL areas
 - ▶ Visible NAPL
 - ▶ NAPL test kits
 - ▶ Sampling results compared to Csat

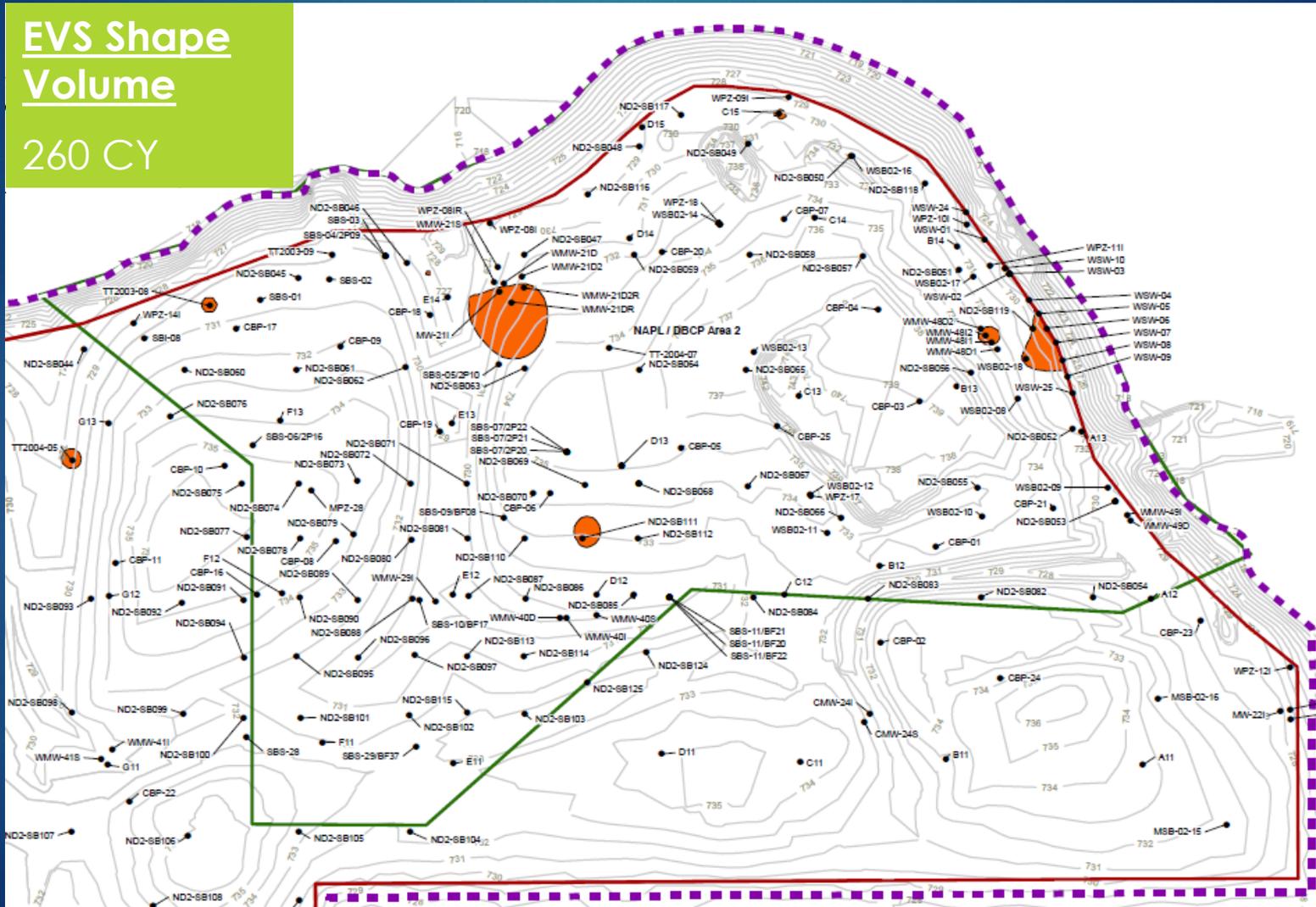
Till Contour Map



- Notes:
1. Base figure modified from Weston, 2006, Remedial Investigation Report for Operable Unit One, Velsicol Chemical Corporation Superfund Site, St. Louis, Gratiot County, Michigan; Prepared for the MDEQ. (Figure 3-7; Top of Till Elevation Contour Map)
 2. Contour lines depicting the top of till are based on till surface elevations presented in the Remedial Investigation Report (Weston, November 2006) and determined during the 2014 Remedial Design Investigation to demonstrate variability of till surface.

NAPL Indication Based on Visual Observation of NAPL

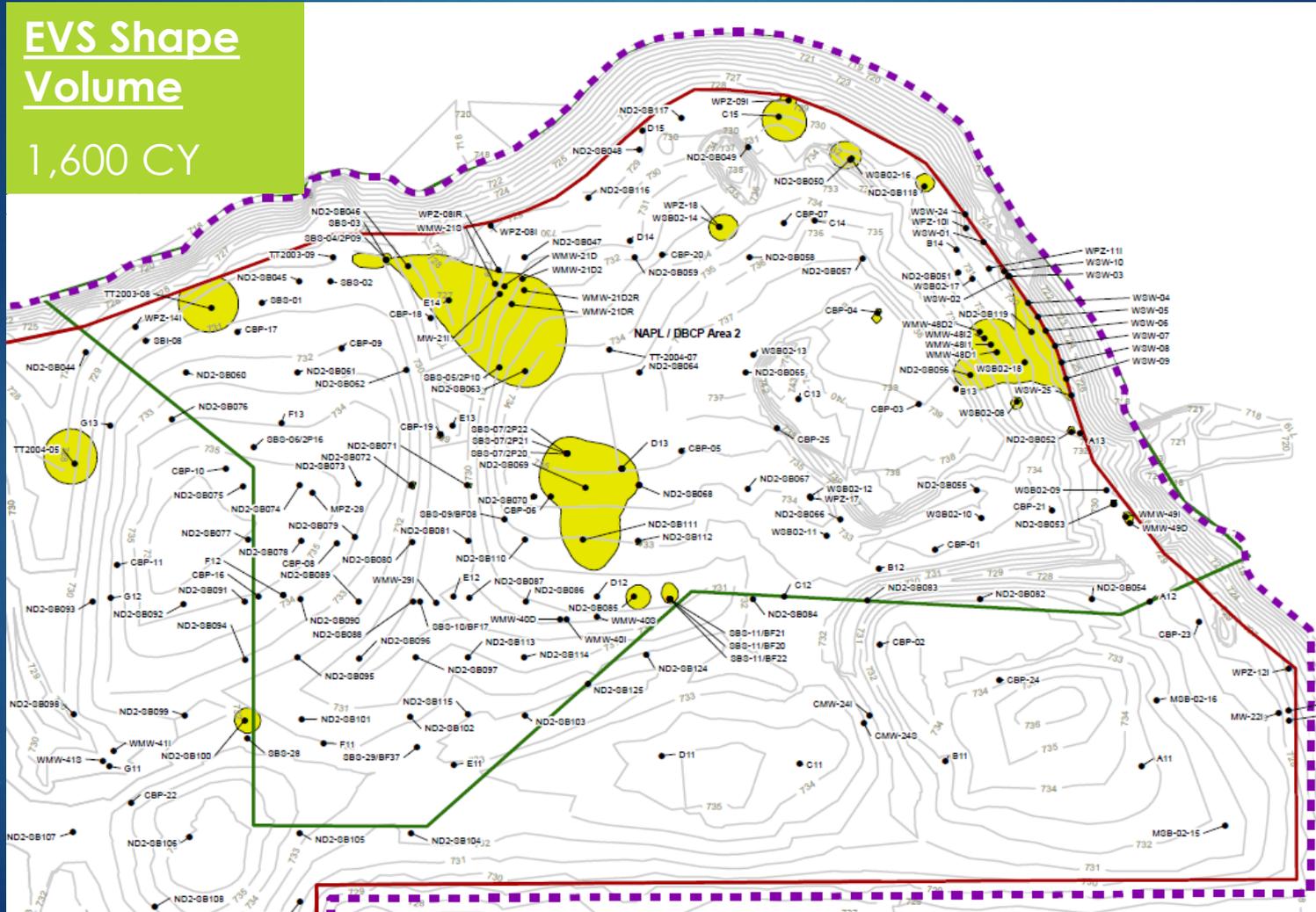
**EVS Shape
Volume**
260 CY



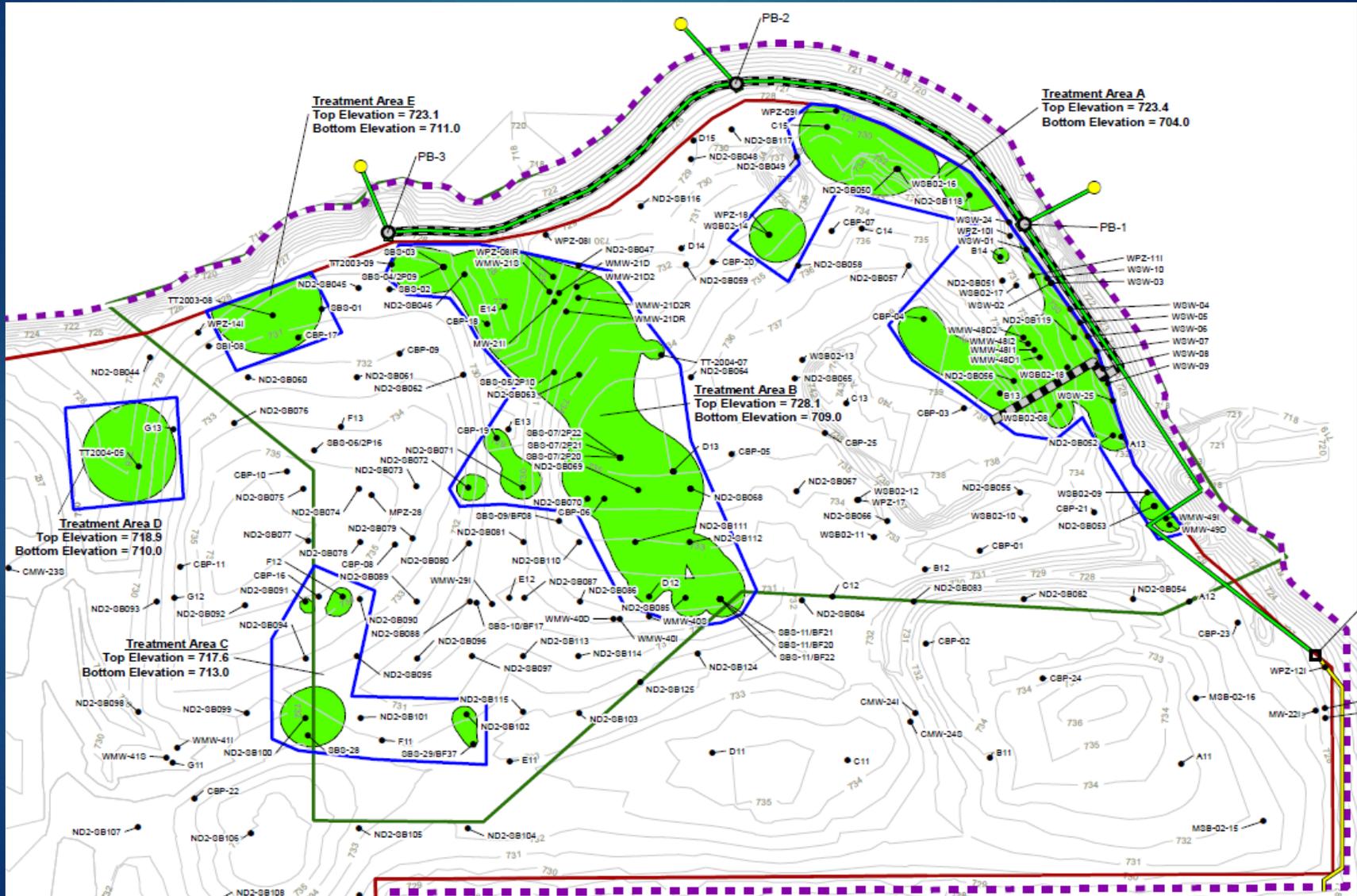
NAPL Indication Based on Positive NTK

EVS Shape
Volume

1,600 CY



ISTT Treatment Areas



Treatment Area Technical Memorandum

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- ▶ Currently under review
- ▶ Explains how target treatment zones are calculated including contaminant mass estimates using 3D modeling

Target Zone Extent and Volume Summary

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NAPL/DBCP Area 2 Treatment Subarea	Estimated Treatment Area (square feet)	Estimated Vertical Thickness of Treatment	Estimated Treatment Volume (cubic yards)
A	41,800	19.4	30,000
B	55,100	19.1	39,000
C	18,500	4.6	3,200
D	9,200	8.9	3,000
E	6,100	12.1	3,000
Total	130,700	--	78,200

Chlorobenzene Mass Estimates Based on EVS Contaminant Modules

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NAPL/DBCP Area 2 Treatment Subarea	Estimated Chlorobenzene Mass based on Water Solubility (pounds)	Estimated Chlorobenzene Mass in +NTK Shape Volume (pounds)	Estimated Chlorobenzene Mass in Visual Observations Shape Volume (pounds)	Total Chlorobenzene Mass Estimate by Area (pounds)
A	400	2,000	4,000	6,400
B	400	4,400	10,700	15,500
C	30	30	NR	60
D	70	400	100	570
E	70	400	100	570
Total	970	7,230	14,900	23,100

Performance Work Statement

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- ▶ Bid Document
- ▶ Will provide prospective vendors with information required to complete system design
 - ▶ Nature and extent
 - ▶ Treatment area defined
 - ▶ Performance standards
- ▶ Jacobs preliminary design to be based in part on vendor system design
- ▶ Contracting strategy discussion in progress

Questions

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