Bayer MaterialScience (formerly Ruco)

Hicksville, NY

Nassau County, Town of Oyster Bay

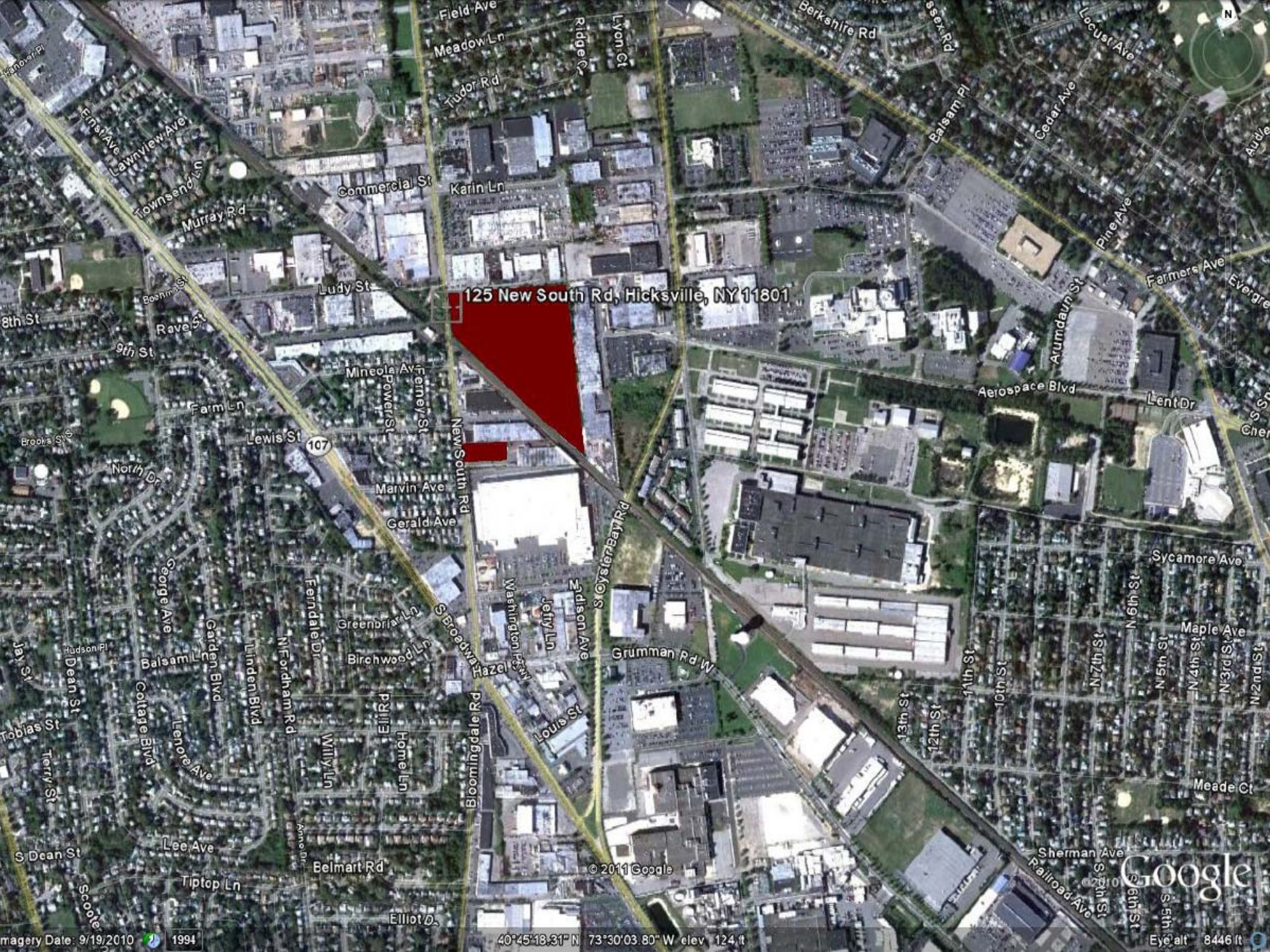
USEPA ID No. NYD002920312

Site No. 130004

Site Description

- 14-acre parcel located southeast of New South Road and Commerce Road in the Hicksville, New York, Town of Oyster Bay, Nassau County
- Bordered to north by industrial properties, to south and west by the LIRR and commercial/industrial properties, and to east by commercial warehouses/buildings
- All buildings and slabs, except for Administration, have been demolished
- Site is relatively flat and covered with soil and gravel
- Nearest body of water about 3 miles away
- Site currently zoned industrial

REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., HICKSVILLE, N.Y. 1967, PHOTOREVISED 1979.


125 New South Rd, Hicksville, NY 11801
Field Ave
Meadow Ln
Tudor Rd
Ridge Ct
Lyon Ct
Berkshire Rd
Locust Ave
Balsam Pl
Cedar Ave
Pine Ave
Farmers Ave
Ernst Ave
Lawnview Ave
Townsend St
Murray Rd
Commercial St
Karin Ln
Ludy St
Boehm St
8th St
Rave St
9th St
Mineola Ave
Ferney St
Tower St
Farm Ln
Lewis St
107
Brooks St
North Dr
Marvin Ave
Gerald Ave
New South Rd
Aerospace Blvd
Arumdaun St
Lent Dr
Sycamore Ave
S Oyster Bay Rd
Washington Ferry
Jeffy Ln
Madison Ave
Grumman Rd W
Greenbriar Ln
S Broadway
Hazel
Birchwood Ln
George Ave
Ferndale Dr
Garden Blvd
Linden Blvd
N Fordham Rd
Balsam Ln
Jay St
Hudson Pl
Dean St
Cottage Blvd
Lenore Ave
Tobias St
Terry St
Willy Ln
Ell Rd
Howe Ln
Bloomingdale Rd
Louis St
Lee Ave
S Dean St
Belmart Rd
Tiptop Ln
Scoole
Elliot Dr
Anne Dr
13th St
12th St
11th St
10th St
N 7th St
N 6th St
N 5th St
N 4th St
N 3rd St
N 2nd St
Maple Ave
Meade Ct
Sherman Ave
Railroad Ave
S 7th St
S 6th St
S 5th St
© 2011 Google
Google
Imagery Date: 9/19/2010
1994
40°45'18.31" N 73°30'03.80" W elev 124 ft
Eye alt 8446 ft

Geology & Hydrogeology

- Upper aquifer primarily glacial outwash, sand and gravel.
- Immediately below is Magothy aquifer, bounded at top by water table and at bottom by relatively impermeable Raritan Formation.
- Lower part of Magothy aquifer becomes confined with depth due to discontinuous lenses of silt and clay. Combined influence of units impedes vertical movement of groundwater.
- Magothy aquifer is primary source of water for municipal and industrial use in this area.
- Groundwater at Site is at 50 feet bgs or greater. General flow direction is north to south. Locally, flow direction is influenced by municipal and industrial pumping centers and recharge basins.

Site Ownership

1950s	• Hooker Chemical purchased Rubber Company of America (RUCO)
1966	• Occidental Chemical Corporation (OXY) bought Hooker Chemical (site became OXY-Hooker RUCO)
1982	• RUCO Polymers bought site from Occidental Chemical
1988	• Sybron Chemicals bought RUCO Polymers
2000	• Bayer bought Sybron Chemicals
2002	• Bayer closed site operations

Site History

- From 1945 to 2002, manufactured latex, plastics and esters
- In 1984, Site placed on NPL (Superfund List)
- EPA CERCLA required OXY to address PCBs and VOCs at (3) OUs:
  - OU 1 – VOCs and metals in onsite soil and groundwater (ROD signed in 1994)
  - OU 2 – PCBs in onsite soils (ROD signed in 1990)
  - OU 3 – VOCs in off-site groundwater (on-going)
- Recently created OU4 – On-site soils and soil vapor

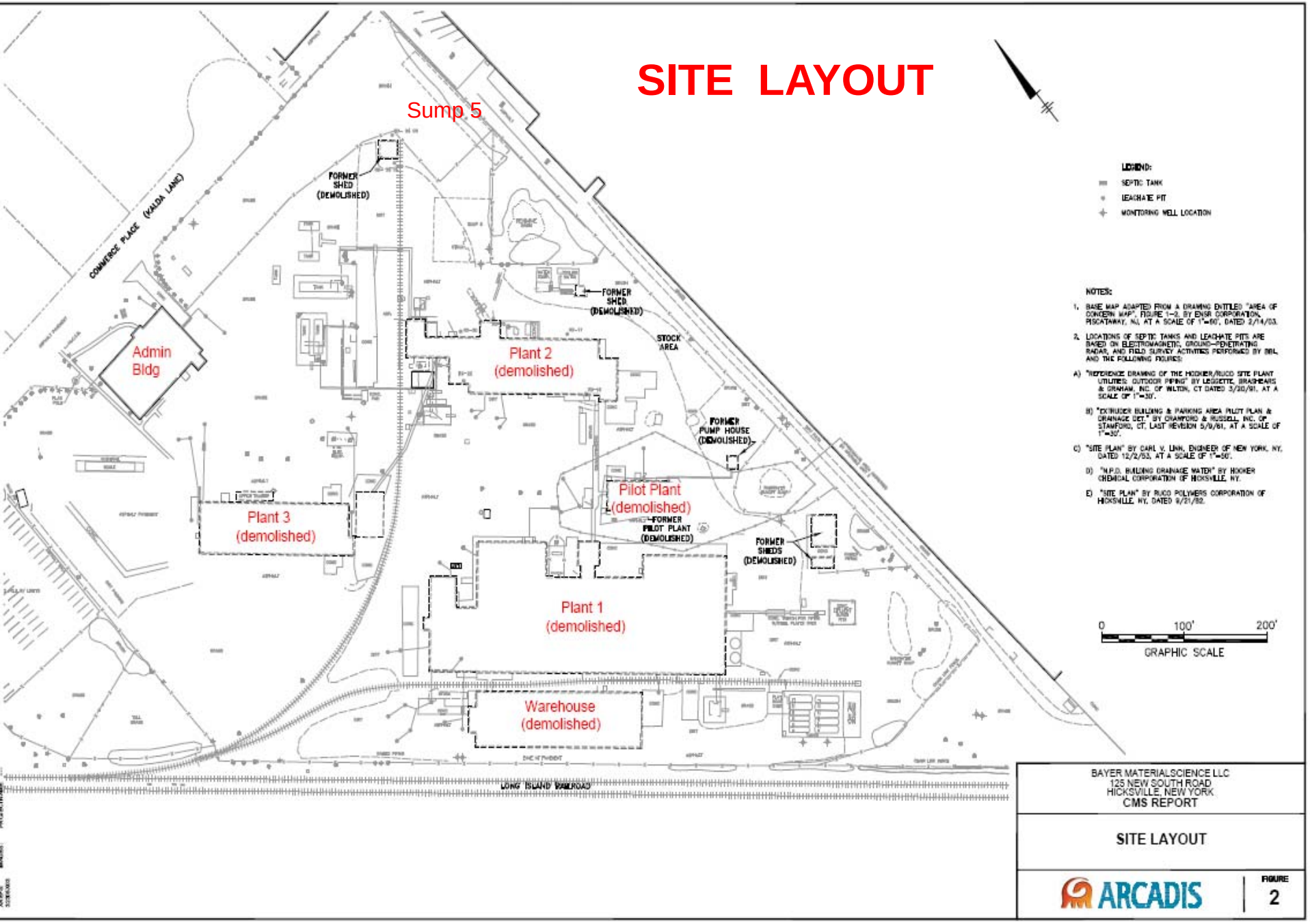
RCRA ACTIVITIES

- 2002-2004 – RFI completed and above-ground structures demolished
- 2005 – First ICM completed (PCBs at transformer area and UST removal)
- 2005-2006 – Foundations demolished and debris disposed or stockpiled for reuse
- 2006 – Second ICM completed (PCBs at Pilot Plant)
- 2007 – On-site soil vapor sampling completed
  - Highest concentrations of VOCs were PCE, TCE cis-1,2-DCE and vinyl chloride
  - Located within footprints of former buildings and along eastern Site boundary

RCRA ACTIVITIES

- 2006-2009 – Site-wide soil investigations completed in several phases (SVOCs, VOCs, metals, PCBs)
- 2008-2009 – Third ICM completed (site-wide PCB soil removal)
- 2009 – DOH requested additional on-site sampling
  - VOC concentrations at locations nearest to residential area (SW corner) were very low; no concerns
- August 2010 – CMS submitted
- August 2011 – Additional delineation of metals completed

SITE LAYOUT



BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK
CMS REPORT

SITE LAYOUT

ARCADIS

FIGURE 2

Removal Of UST

17

Removal of Previously-Unidentified Underground Storage Tank Encountered Beneath the Former Plant 2 Slab – AOC 51 (1/9/06)

18

Underground Storage Tank Removed from Beneath the Former Plant 2 Slab (1/9/06)

Removal of Building Slab

7

Break-up of Plant 1 Slab in Progress (12/12/05)

8

Stained Soil Exhibiting an Odor Encountered Beneath Plant 1 (12/12/05)

AOC 45 – Pilot Plant: Sump in NE Corner of Plant (Interior and Exterior)

Pre-Cleaning

Interior Sump, Pre-Cleaning

Pilot Plant Excavation

7

Excavation Area 2 (7/6/06) -
Installed Sheeting

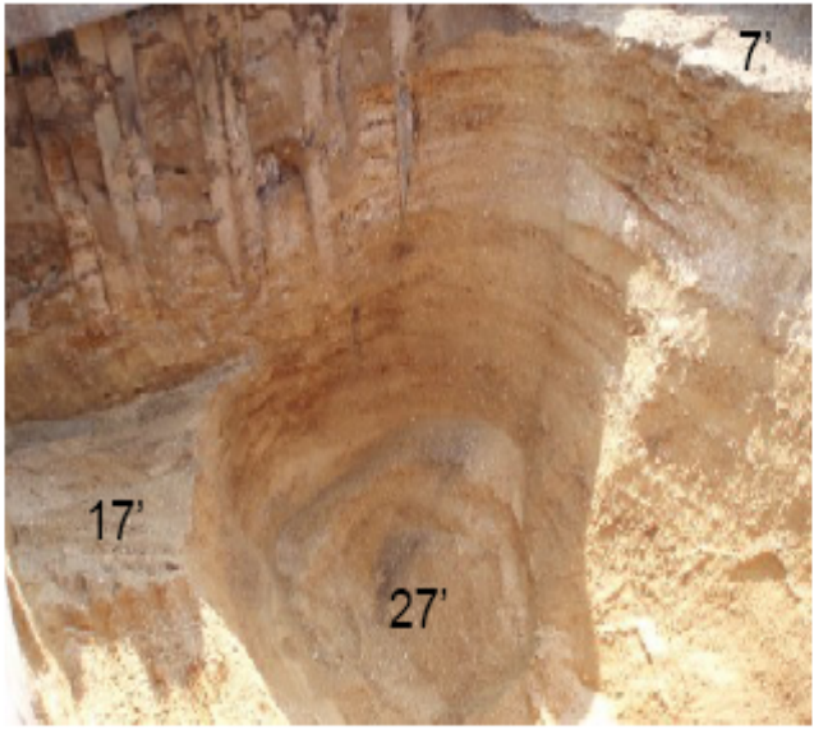
8

Excavation Area 2 (7/10/06) -
Excavation in Progress

Pilot Plant Excavation

13

Excavation Area 2 (7/10/06) - Final Limits (Looking East)



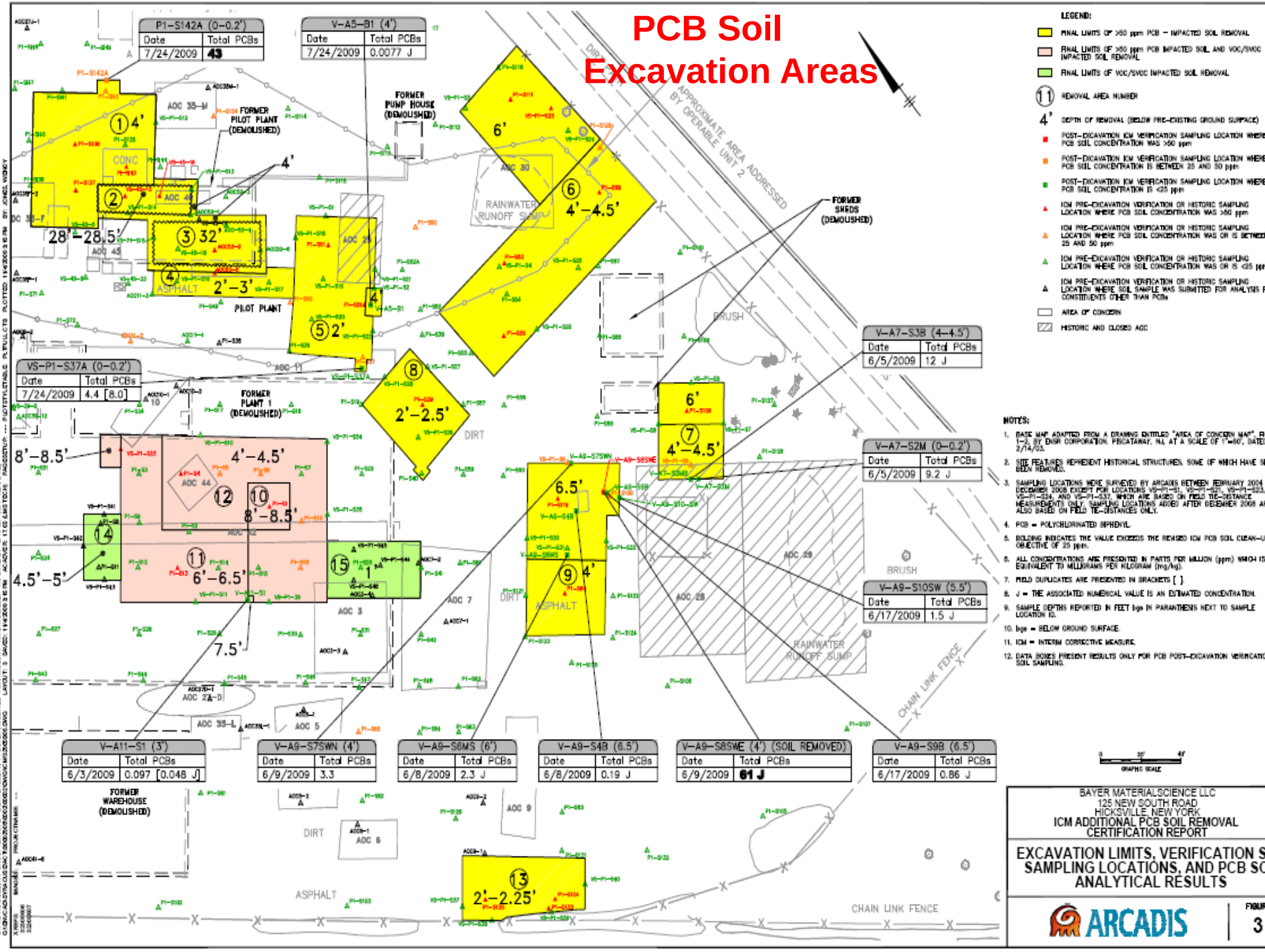
14

Excavation Area 2 (7/10/06) - Final Limits (Looking South)

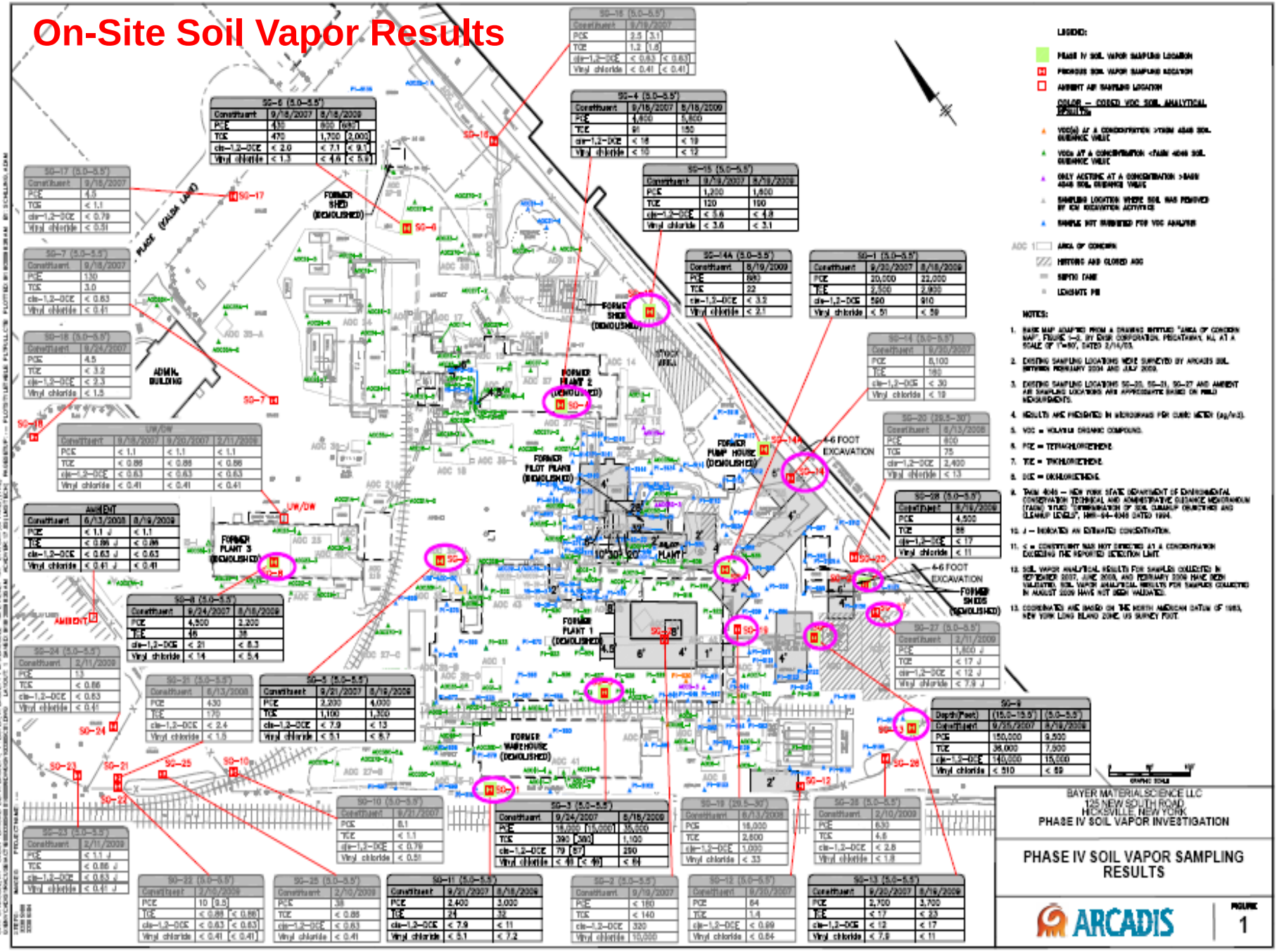
Additional PCB Soil Excavation

Completed Sheeting Around Area 2

Excavation area 6


PCB Soil Excavation Areas
P1-S142A (0-0.2')
Date | Total PCBs
7/24/2009 | 43
V-A5-S1 (4')
Date | Total PCBs
7/24/2009 | 0.0077 J
VS-P1-S37A (0-0.2')
Date | Total PCBs
7/24/2009 | 4.4 [8.0]
V-A7-S3B (4-4.5')
Date | Total PCBs
6/5/2009 | 12 J
V-A7-S2M (0-0.2')
Date | Total PCBs
6/5/2009 | 9.2 J
V-A9-S10SW (5.5')
Date | Total PCBs
6/17/2009 | 1.5 J
V-A11-S1 (3')
Date | Total PCBs
6/3/2009 | 0.097 [0.048 J]
V-A9-S7SWN (4')
Date | Total PCBs
6/9/2009 | 3.3
V-A9-S8MS (6')
Date | Total PCBs
6/8/2009 | 2.3 J
V-A9-S4B (6.5')
Date | Total PCBs
6/8/2009 | 0.19 J
V-A9-S8SWE (4') (SOIL REMOVED)
Date | Total PCBs
6/9/2009 | 61 J
V-A9-S9B (6.5')
Date | Total PCBs
6/17/2009 | 0.86 J
LEGEND:
FINAL LIMITS OF >50 ppm PCB - IMPACTED SOIL REMOVAL
FINAL LIMITS OF >50 ppm PCB IMPACTED SOIL AND VOC/SVOC IMPACTED SOIL REMOVAL
FINAL LIMITS OF VOC/SVOC IMPACTED SOIL REMOVAL
REMOVAL AREA NUMBER
DEPTH OF REMOVAL (BELOW PRE-EXISTING GROUND SURFACE)
POST-EXCAVATION ICM VERIFICATION SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION WAS >50 ppm
POST-EXCAVATION ICM VERIFICATION SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION IS BETWEEN 25 AND 50 ppm
POST-EXCAVATION ICM VERIFICATION SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION IS <25 ppm
ICM PRE-EXCAVATION VERIFICATION OR HISTORIC SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION WAS >50 ppm
ICM PRE-EXCAVATION VERIFICATION OR HISTORIC SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION WAS OR IS BETWEEN 25 AND 50 ppm
ICM PRE-EXCAVATION VERIFICATION OR HISTORIC SAMPLING LOCATION WHERE PCB SOIL CONCENTRATION WAS OR IS <25 ppm
ICM PRE-EXCAVATION VERIFICATION OR HISTORIC SAMPLING LOCATION WHERE SOIL SAMPLE WAS SUBMITTED FOR ANALYSIS OF CONSTITUENTS OTHER THAN PCBs
AREA OF CONCERN
HISTORIC AND CLOSED AOC
NOTES:
1. BASE MAP ADAPTED FROM A DRAWING ENTITLED "AREA OF CONCERN MAP", SHEET 1-2, BY ENSR CORPORATION, PISCATAWAY, NJ, AT A SCALE OF 1"=60', DATED 2/14/03.
2. SITE FEATURES REPRESENT HISTORICAL STRUCTURES, SOME OF WHICH HAVE SINCE BEEN REMOVED.
3. SAMPLING LOCATIONS WERE SURVEYED BY ARCADIS BETWEEN FEBRUARY 2004 AND DECEMBER 2008 EXCEPT FOR LOCATIONS VS-P1-S1, VS-P1-S21, VS-P1-S23, VS-P1-S24, AND VS-P1-S37, WHICH ARE BASED ON FIELD TIE-DISTANCE MEASUREMENTS ONLY. SAMPLING LOCATIONS ADDED AFTER DECEMBER 2008 ARE ALSO BASED ON FIELD TIE-DISTANCES ONLY.
4. PCB = POLYCHLORINATED BIPHENYL.
5. BOLDING INDICATES THE VALUE EXCEEDS THE REVISED ICM PCB SOIL CLEAN-UP OBJECTIVE OF 25 ppm.
6. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER MILLION (ppm) WHICH IS EQUIVALENT TO MILLIGRAMS PER KILOGRAM (mg/kg).
7. FIELD DUPLICATES ARE PRESENTED IN BRACKETS [ ].
8. J = THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION.
9. SAMPLE DEPTHS REPORTED IN FEET bgs IN PARANTHESIS NEXT TO SAMPLE LOCATION ID.
10. bgs = BELOW GROUND SURFACE.
11. ICM = INTERIM CORRECTIVE MEASURE.
12. DATA BOXES PRESENT RESULTS ONLY FOR PCB POST-EXCAVATION VERIFICATION SOIL SAMPLING.
GRAPHIC SCALE
BAYER MATERIALSCIENCE LLC
125 NEW SOUTH ROAD
HICKSVILLE, NEW YORK
ICM ADDITIONAL PCB SOIL REMOVAL CERTIFICATION REPORT
EXCAVATION LIMITS, VERIFICATION S
SAMPLING LOCATIONS, AND PCB SO
ANALYTICAL RESULTS
ARCADIS
FIGUR
3

On-Site Soil Vapor Results



Corrective Measure Alternatives Evaluated

- Alternative 1 – No Further Action
- Alternative 2 – Site Controls and Monitoring
- Alternative 3 – Excavation of PCB-Impacted Soil > 50 ppm; Offsite Disposal; Capping for Industrial Use; Site Controls; Monitoring
- Alternative 4 - Excavation of PCB-Impacted Soil > 25 ppm; Offsite Disposal; Capping for Industrial Use; Site Controls; Monitoring
- Alternative 5 – Excavation of PCB-Impacted Soil > 25 ppm; Offsite Disposal; Capping for Commercial Use; Site Controls; Monitoring
- Alternative 6 – Excavation of PCB-Impacted Soil > 10 ppm; Offsite Disposal; Capping for Commercial Use; Site Control; Monitoring
- Alternative 7 – Excavation of PCB-Impacted Soil to Commercial Use SCOs (1 ppm); Offsite Disposal; Site Controls; Monitoring.

Criteria Used to Evaluate Alternatives

- Compliance with Standards, Criteria, and Guidance Values (SCGs)
- Overall Protection of Human Health and Environment.
- Short-Term Effectiveness
- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility, or Volume through Treatment
- Implementability
- Cost

Proposed Alternatives

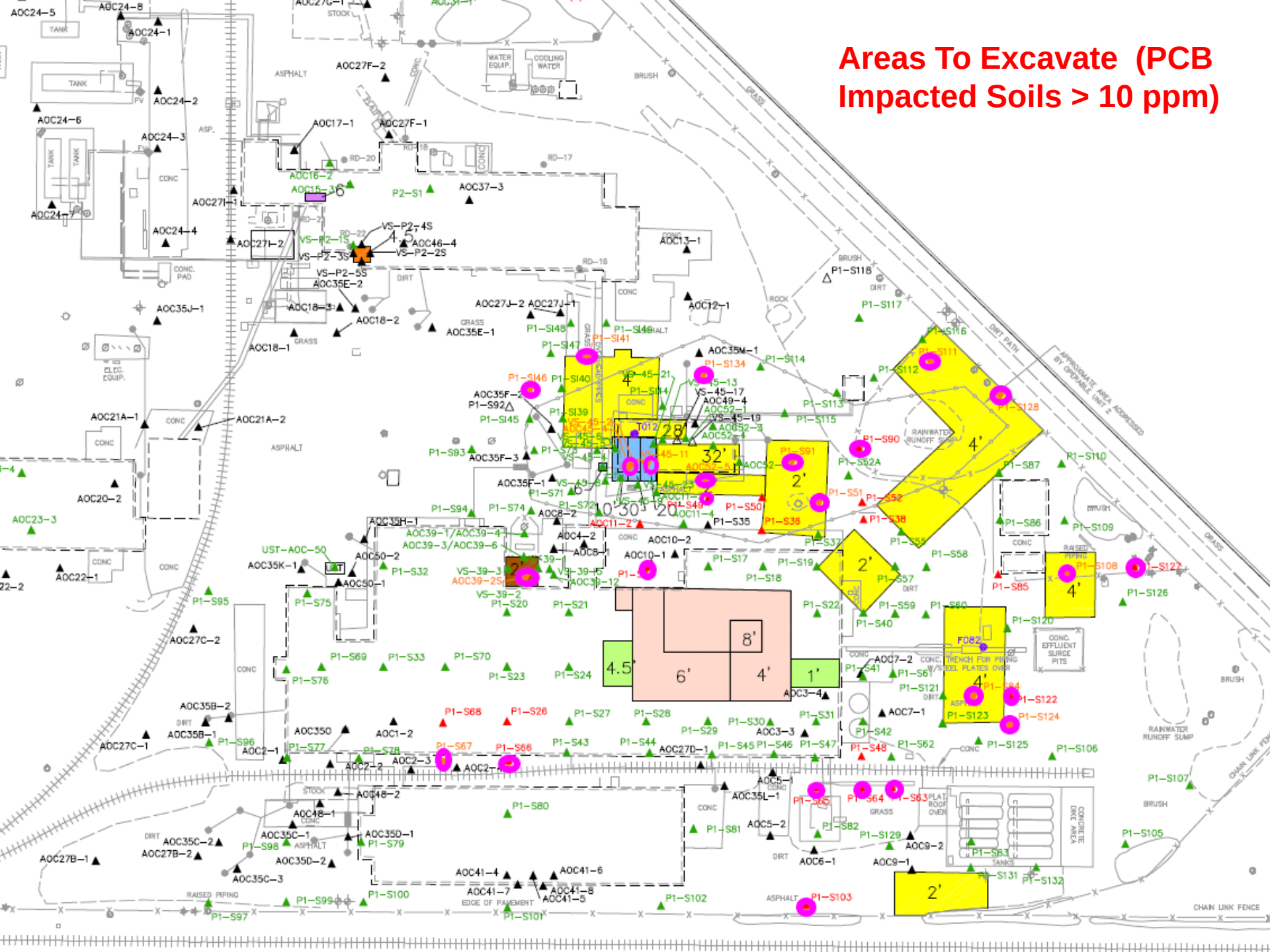
- Revised Alternative 6 (meets ROD for OU2)
  - Remove PCB-impacted subsurface soil > 10 ppm;
  - Cap with one foot of clean fill the remaining PCB-impacted surface soil > 1 ppm;
  - Cap with one foot on clean fill the remaining SVOC impacted surface soil at concentrations above commercial SCOs;
  - Hydroseed backfilled and capped areas, after grading and compaction;
  - Site Controls (SMP, deed restriction, town zoning restrictions, engineering controls); and
  - Monitoring

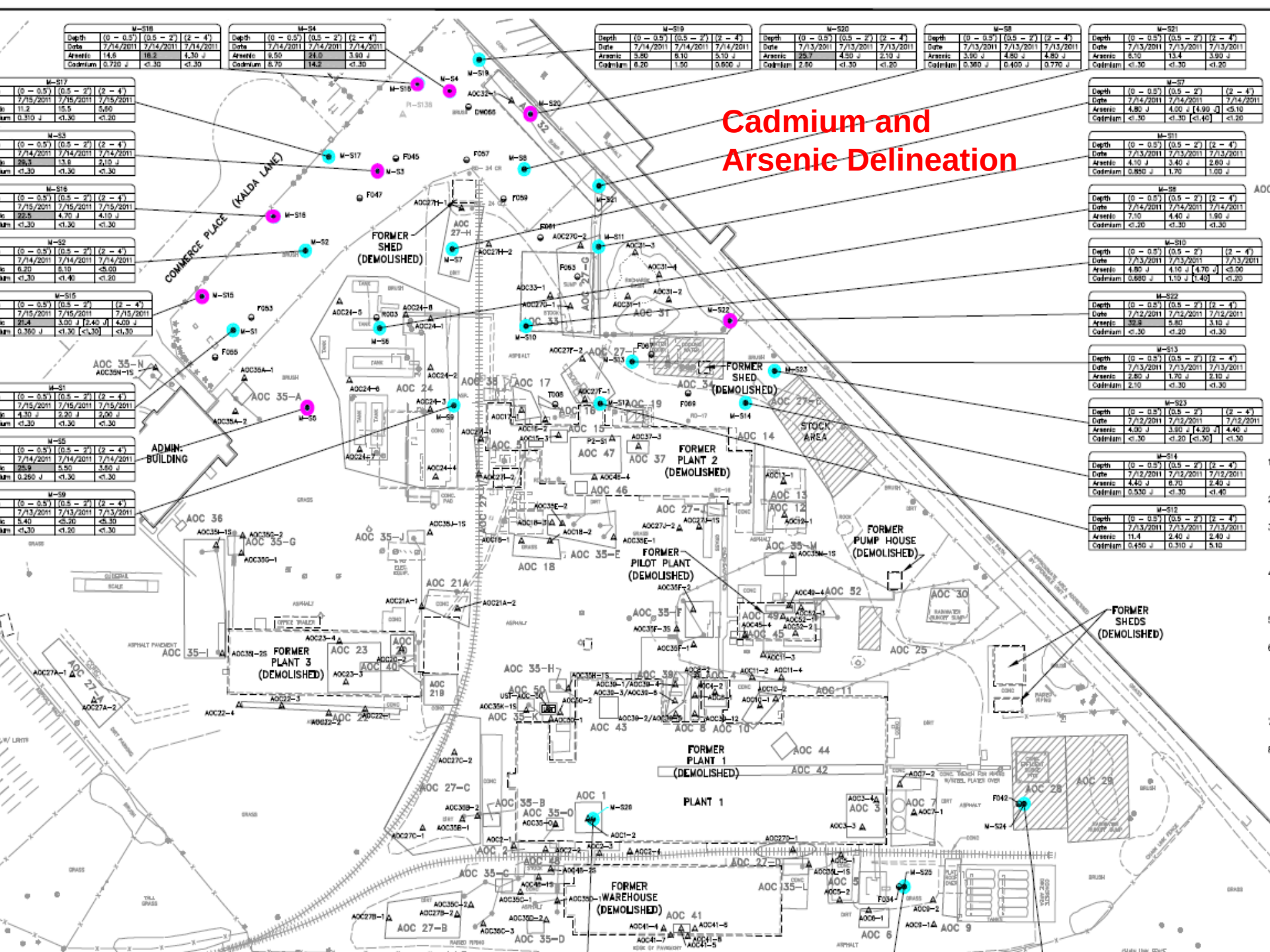
Proposed Alternatives (Continued)

- Soil Vapor - Preventative or mitigation measures (cap, vapor barrier, venting system, SSDS) to address potential vapor intrusion in future building construction
- Metals - Excavate soil with arsenic and cadmium at concentrations exceeding commercial SCOs

Exceptions to Proposed Alternatives

- Excavation of PCB Impacted Soil:
  - Sump 5 – PCBs at 24 ppm were left-in place below 10 feet of clean soil during OU2 cleanup and approved by USEPA
  - Pilot Plant – PCBs at 23 ppm or greater will be left-in-place below 22 to 34 feet of clean soil (2009 PCB Soil Removal ICM)
  - Removal of PCB impacted soil above 10 ppm will extend to a maximum depth of 10 feet; this is equally protective as OU-2 cleanup


Areas To Excavate (PCB Impacted Soils > 10 ppm)


Cadmium and
Arsenic Delineation
M-S16
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/14/2011 | 7/14/2011 | 7/14/2011
Arsenic | 14.6 | 18.2 | 4.30 J
Cadmium | 0.720 J | <1.30 | <1.30
M-S4
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/14/2011 | 7/14/2011 | 7/14/2011
Arsenic | 9.50 | 24.0 | 3.90 J
Cadmium | 8.70 | 14.2 | <1.30
M-S19
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/14/2011 | 7/14/2011 | 7/14/2011
Arsenic | 5.80 | 8.10 | 5.10 J
Cadmium | 0.20 | 1.50 | 0.600 J
M-S20
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/13/2011 | 7/13/2011 | 7/13/2011
Arsenic | 25.7 | 4.50 J | 2.10 J
Cadmium | 2.60 | <1.30 | <1.20
M-S8
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/13/2011 | 7/13/2011 | 7/13/2011
Arsenic | 3.90 J | 4.80 J | 4.80 J
Cadmium | 0.360 J | 0.400 J | 0.770 J
M-S21
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/13/2011 | 7/13/2011 | 7/13/2011
Arsenic | 8.10 | 13.4 | 3.90 J
Cadmium | <1.30 | <1.30 | <1.20
M-S17
(0 – 0.5') | (0.5 – 2') | (2 – 4')
7/15/2011 | 7/15/2011 | 7/15/2011
11.2 | 16.5 | 5.60
0.310 J | <1.30 | <1.20
M-S3
(0 – 0.5') | (0.5 – 2') | (2 – 4')
7/14/2011 | 7/14/2011 | 7/14/2011
28.3 | 13.8 | 2.10 J
<1.30 | <1.30 | <1.30
M-S7
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/14/2011 | 7/14/2011 | 7/14/2011
Arsenic | 4.80 J | 4.00 J [4.90 J] | <5.10
Cadmium | <1.30 | <1.30 [<1.40] | <1.20
M-S11
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/13/2011 | 7/13/2011 | 7/13/2011
Arsenic | 4.10 J | 3.40 J | 2.60 J
Cadmium | 0.850 J | 1.70 | 1.00 J
M-S16
(0 – 0.5') | (0.5 – 2') | (2 – 4')
7/15/2011 | 7/15/2011 | 7/15/2011
22.5 | 4.70 J | 4.10 J
<1.30 | <1.30 | <1.30
M-S2
(0 – 0.5') | (0.5 – 2') | (2 – 4')
7/14/2011 | 7/14/2011 | 7/14/2011
6.20 | 8.10 | <5.00
<1.30 | <1.40 | <1.20
M-S8
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/14/2011 | 7/14/2011 | 7/14/2011
Arsenic | 7.10 | 4.40 J | 1.90 J
Cadmium | <1.20 | <1.30 | <1.30
M-S10
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/13/2011 | 7/13/2011 | 7/13/2011
Arsenic | 4.80 J | 4.10 J [4.70 J] | <5.00
Cadmium | 0.680 J | 1.10 J [1.40] | <1.20
M-S15
(0 – 0.5') | (0.5 – 2') | (2 – 4')
7/15/2011 | 7/15/2011 | 7/15/2011
21.4 | 3.00 J [2.40 J] | 4.00 J
0.360 J | <1.30 [<1.30] | <1.30
M-S22
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/12/2011 | 7/12/2011 | 7/12/2011
Arsenic | 29.8 | 5.80 | 3.10 J
Cadmium | <1.30 | <1.20 | <1.30
M-S13
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/13/2011 | 7/13/2011 | 7/13/2011
Arsenic | 2.80 J | 1.70 J | 2.10 J
Cadmium | 2.10 | <1.30 | <1.30
M-S1
(0 – 0.5') | (0.5 – 2') | (2 – 4')
7/15/2011 | 7/15/2011 | 7/15/2011
4.30 J | 2.20 J | 2.00 J
<1.30 | <1.30 | <1.30
M-S23
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/12/2011 | 7/12/2011 | 7/12/2011
Arsenic | 4.00 J | 3.90 J [4.20 J] | 4.40 J
Cadmium | <1.30 | <1.20 [<1.30] | <1.30
M-S5
(0 – 0.5') | (0.5 – 2') | (2 – 4')
7/14/2011 | 7/14/2011 | 7/14/2011
25.9 | 5.50 | 3.60 J
0.260 J | <1.30 | <1.30
M-S14
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/12/2011 | 7/12/2011 | 7/12/2011
Arsenic | 4.40 J | 8.70 | 2.40 J
Cadmium | 0.530 J | <1.30 | <1.40
M-S9
(0 – 0.5') | (0.5 – 2') | (2 – 4')
7/13/2011 | 7/13/2011 | 7/13/2011
5.40 | <5.20 | <5.30
<1.30 | <1.20 | <1.30
M-S12
Depth | (0 – 0.5') | (0.5 – 2') | (2 – 4')
Date | 7/13/2011 | 7/13/2011 | 7/13/2011
Arsenic | 11.4 | 2.40 J | 2.40 J
Cadmium | 0.450 J | 0.310 J | 5.10
COMMERCE PLACE
(KALDA LANE)
FORMER SHED (DEMOLISHED)
FORMER SHED (DEMOLISHED)
ADMIN. BUILDING
STOCK AREA
FORMER PLANT 2 (DEMOLISHED)
FORMER PILOT PLANT (DEMOLISHED)
FORMER PUMP HOUSE (DEMOLISHED)
FORMER SHEDS (DEMOLISHED)
FORMER PLANT 3 (DEMOLISHED)
FORMER PLANT 1 (DEMOLISHED)
PLANT 1
FORMER WAREHOUSE (DEMOLISHED)
AOC 1
AOC 2
AOC 3
AOC 4
AOC 5
AOC 6
AOC 7
AOC 8
AOC 9
AOC 10
AOC 11
AOC 12
AOC 13
AOC 14
AOC 15
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M-S24
M-S25
M-S26
F045
F047
F053
F055
F057
F059
F061
F063
F065
F069
F034
F042

Cost of Alternatives

Remedial Alternative	Estimated Capital Costs	Estimated O&M Costs	Total Costs (Rounded)
Alternative 1	0	0	0
Alternative 2	$105,000	$250,000	$360,000
Alternative 3	$830,898	$481,000	$1,310,000
Alternative 4	$2,528, 631	$481,000	$3,000,000
Alternative 5	$2,965, 491	$481,000	$3,400,000
Alternative 6	**$4,643,757**	**$481,000**	**$5,100,000**
Alternative 7	$15,283,661	$193,000	$15,500,000
Additional Work (SV Mitigation & Metals Removal)	TBD	TBD	TBD