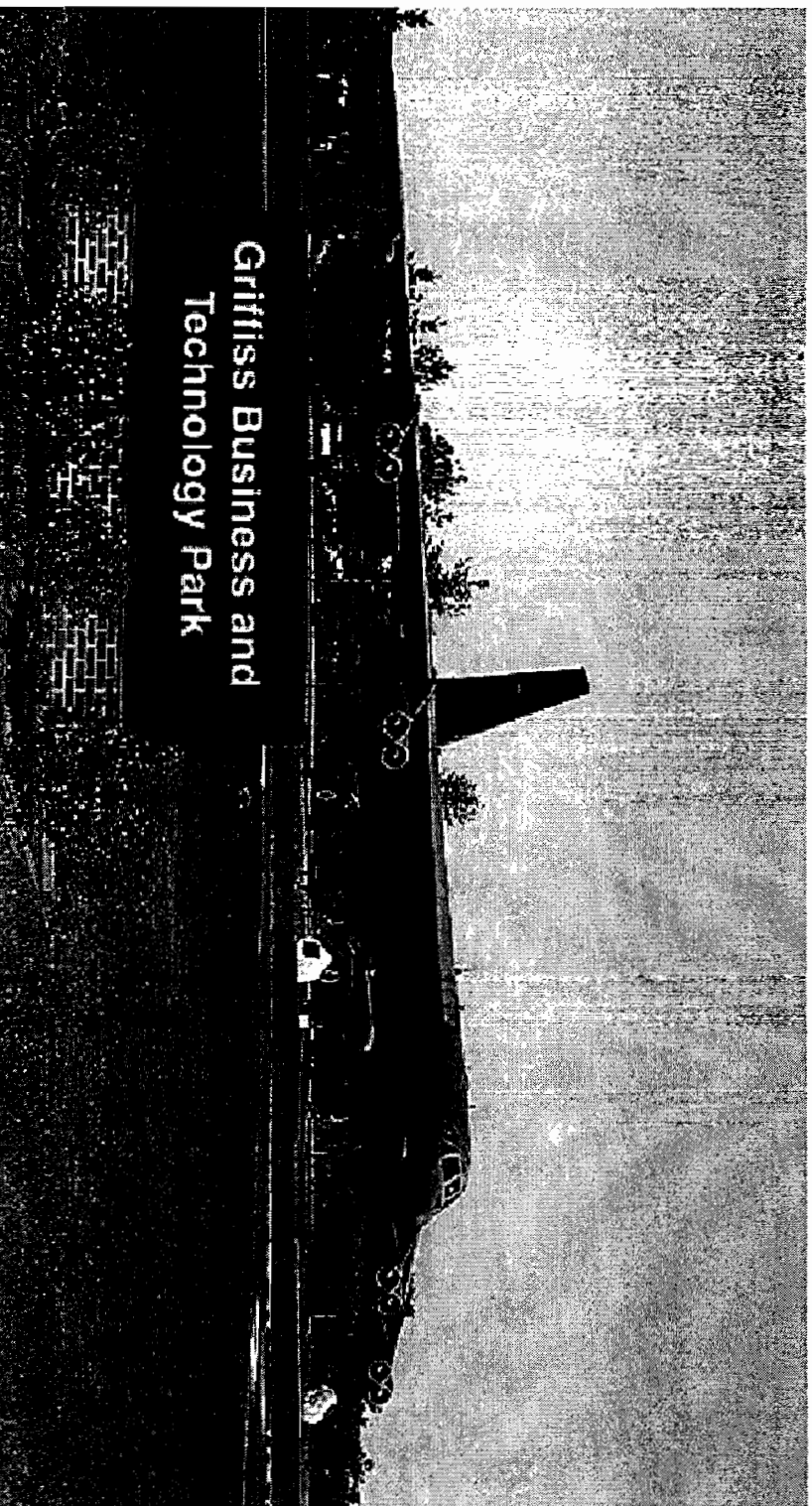


Griffiss Environmental Program



Restoration Advisory Board (RAB)

June 4, 2007



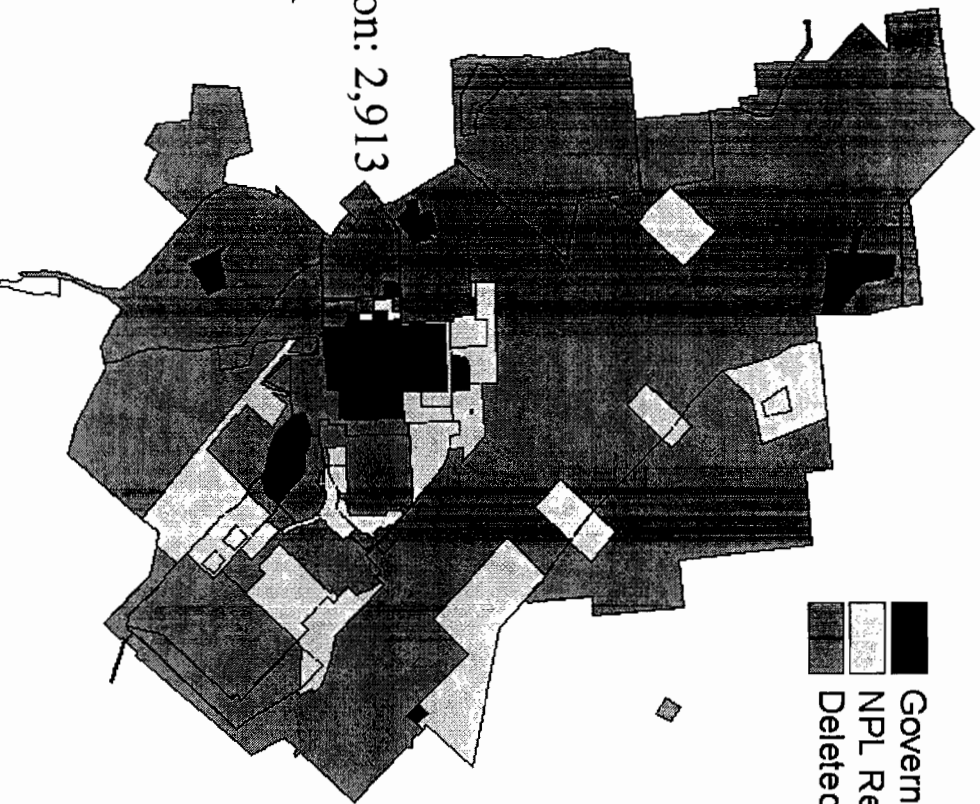
RAB MEETING AGENDA

*Don't
forget
the
agenda*

- Introduction & Welcome
- Update on current issues
 - National Priorities List (NPL) Partial Deletion
 - Vapor Intrusion
- Performance Based Contracting
 - On-Base Groundwater Chlorinated Solvents
 - Petroleum Remediation
 - Long Term Monitoring
 - Land Farming
- Proposed Plans and Records of Decision
- Property Transfer
- GLDC Update
- Questions & Comments

National Priorities List (NPL) - Partial Deletion

Total acres: 3,638A
Government Retained: 136A
Acres to be transferred: 3,502A
Acres Proposed for NPL Deletion: 2,913
Acres remaining on NPL: 589A



Government Retained
NPL Retained
Deleted from the NPL



National Priorities List (NPL) Partial Deletion Status

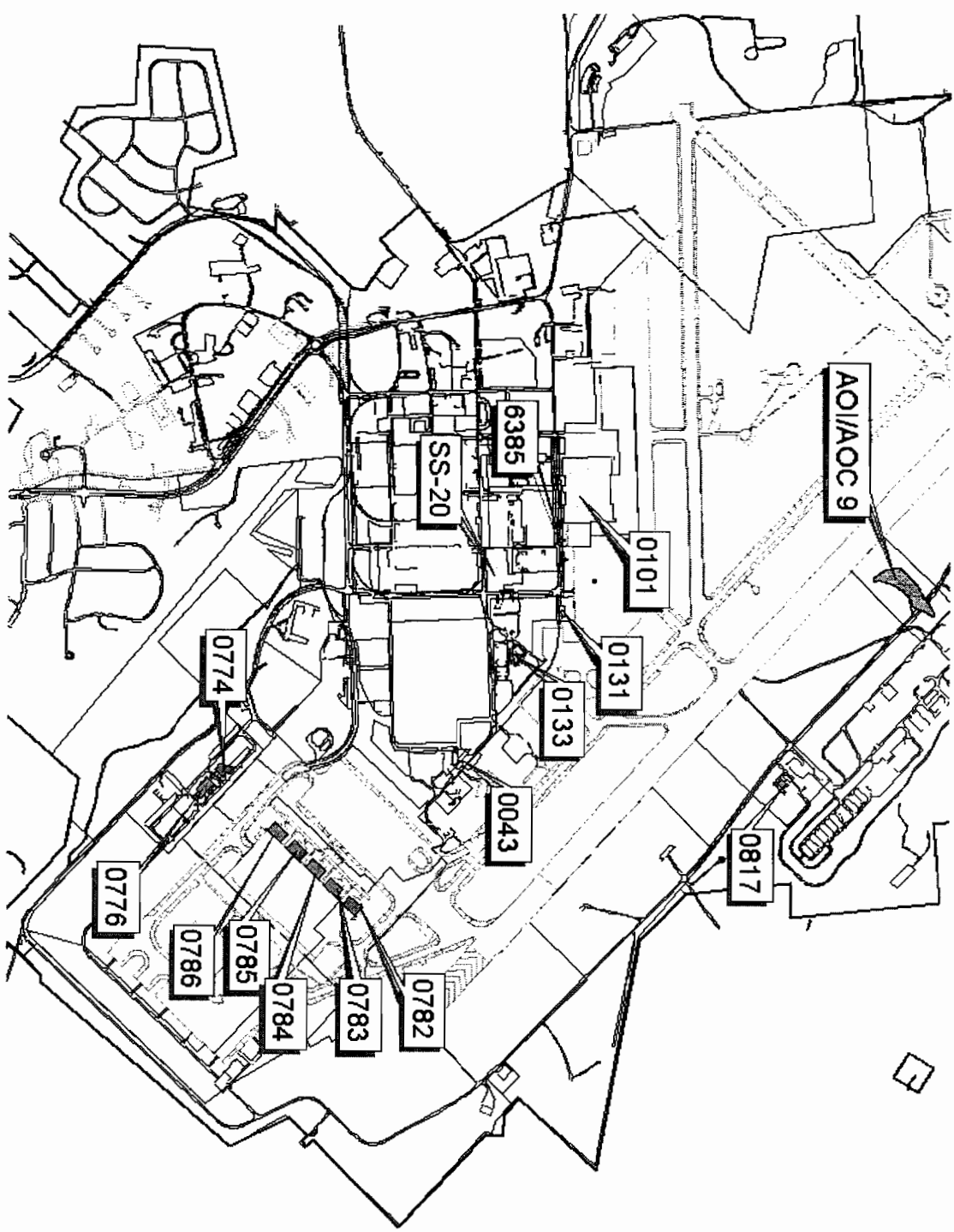
- Awaiting NYS concurrence on draft notice
- After NYS concurs, final notice is prepared and NYS Governor concurs
- Web site will be updated and notice will be published
- Public comments solicited
- Responses to comments issued
- Notice becomes final



VAPOR INTRUSION

- No levels of concern in indoor air results to date
- None of the sites are located within the Partial NPL Deletion Area
- June 2007 meeting scheduled with EPA, NYSDEC and AFRPA to discuss sub-slab results
 - Some sub-slab levels are extremely high (Nose docks 785 & 786)
 - Goal is to establish future actions
- Present Vapor Intrusion impacts
 - Early Transfer Parcels and Building 101 transfers are being delayed
 - Six (6) Proposed Plans / Records of Decisions are on hold
 - NYSDEC will not concur on the Partial NPL Deletion Package

Soil Vapor Operable Unit



Tobias

Performance Based Contract

Chlorinated Plume Remediation Overview

- Remediation of 5 TCE-contaminated sites
 - Apron 2 (former refueling area)
 - Landfill 6 (capped landfill)
 - Building 775 (up-gradient of Landfill 6)
 - Weapons Storage Area (WSA) / Building 817
 - Area of Concern 9 (former landfill area south of WSA)
- Performance Based Contract
 - Awarded to team of Parsons, FPM, and Ecology & Environment in May 2006
 - Administered by USACE Kansas City District



Performance Based Contract Chlorinated Plume Remediation Overview

- Complete Feasibility Study (FS), Proposed Plan (PP), Record of Decision (ROD) and Remedial Design (RD) for all five sites
- Perform Remedial Action Operation (RAO) and Long Term Monitoring (LTM) at all five sites
- Achieve Operating Properly and Successfully (OPS) Determination for all five sites
- Complete all objectives by 2016



Schedule Overview

Chlorinated Plume Remediation

2006	Project Planning, Soil Vapor Investigation and Pre-design Investigation
2006-2007	Finalize FS, PP, ROD and Remedial Design
2008	Remedial Construction
2008-2011	Performance Monitoring
2011	OPS Determination
2009-2015	Operations and Maintenance
2012-2015	LTM
2016	Contract closeout



Progress Update
Chlorinated Plume Remediation
Previous RAB briefing – Nov 2006

- **Soil Vapor Investigation – Oct 2006 – Dec 2006**
- **Pre-design Site Investigation – Sep 2006 - Apr 2007**
- **Regulator Briefings – March 2007 and May 2007**
- **Final Proposed Plan submitted – May 2007**



Soil Vapor Survey

Chlorinated Plume Remediation

- NYS regulatory requirement
- Soil Vapor Survey
 - Sub-slab and indoor air sampling
 - Building 774 and Building 776 in SAC Hill area (occupied)
 - Building 817 and Nosedock Buildings (unoccupied)



Pre-Design Site Investigation (PDI) Chlorinated Plume Remediation

- Provide data for finalizing the Proposed Plan
- Baseline groundwater contamination survey and update of plume maps at all five sites
- Field work began Sep 2006 and ended Apr 2007
- Unexpected results at AOC-9
 - Contamination in high concentrations upgradient of AOC-9
 - AOC 9 removed from current regulatory path – 1 year delay



AOCC 9 Additional Investigation

- Planned to begin June 2007 and be completed August 2007
- Define extent of plume upgradient
 - Minimum of 50 new temporary monitoring wells north and east of existing locations
 - Minimum of 25 soil samples
- Determine the source area



Proposed Plan

Chlorinated Plume Remediation Approaches

- Apron 2 – Monitored Natural Attenuation (MNA)
- Landfill 6 – Vegetable Oil Injection
- Building 775 - Groundwater Extraction and Treatment
- Building 817 – Vegetable Oil Injection
- AOC 9 – To Be Determined



Apron 2 Proposed Plan

- Monitored Natural Attenuation (MNA)
- Current Site Conditions
 - Large dispersed plume (40 acres)
 - Shallow aquifer (10' to 25') with TCE plume co-mingled with BTEX plume
 - VC in well near Six Mile Creek
- Rationale for selection
 - BTEX is stimulating TCE reductive dechlorination
 - Reductions are consistent
 - Air sparging barrier as contingency to protect Six Mile Creek

Landfill 6 Proposed Plan

- Enhanced Dechlorination - Hot Spot Injection with Vegetable Oil
- Current Site Conditions
 - Deep plume (60') migrated from former landfill area
 - Very flat gradient
 - TCE/DCE concentrations are decreasing with good evidence for existing reductive dechlorination processes
- Rationale for Selection
 - Hot spot near LF6MW-12 will drive remediation
 - Inject in 500 ppb area at the 35'-55' interval
 - Speed up the existing dechlorination process
 - Monitoring wells will maintain protection of Three Mile Creek
 - Remedy will reduce site concentrations to below 50 ppb and allow conversion to LTM/ICs in 7 to 10 years



Building 775 Proposed Plan

- Extraction and Treatment
- Current Site Conditions
 - Adjacent to Landfill 6 - deep aquifer (100') with flat gradient
 - Dilute levels of TCE (134 ppb max)
 - Multiple small sources likely
 - Little evidence of an existing reductive dechlorination process
- Rationale for selection
 - Aggressive extraction will reduce time for cleanup
 - May be able to use city of Rome POTW
 - Remedy will reduce concentration to below 50 ppb and allow conversion to LTM/ICs within 10 years

WSA/Bldg 817 Proposed Plan

- Reductive Dechlorination using Vegetable Oil Injection
- Current Site Conditions
 - Dilute but persistent TCE/PCE plume
 - No impact to Six Mile Creek
- Rationale for Selection
 - Persistent source appears to be impacting groundwater
 - Enhanced reductive dechlorination by vegetable oil injection
 - Air sparging barrier contingency to remove DCE and VC if migrating toward creek
 - Remedy will reduce concentration to below 50 ppb and allow conversion to LTM/ICs

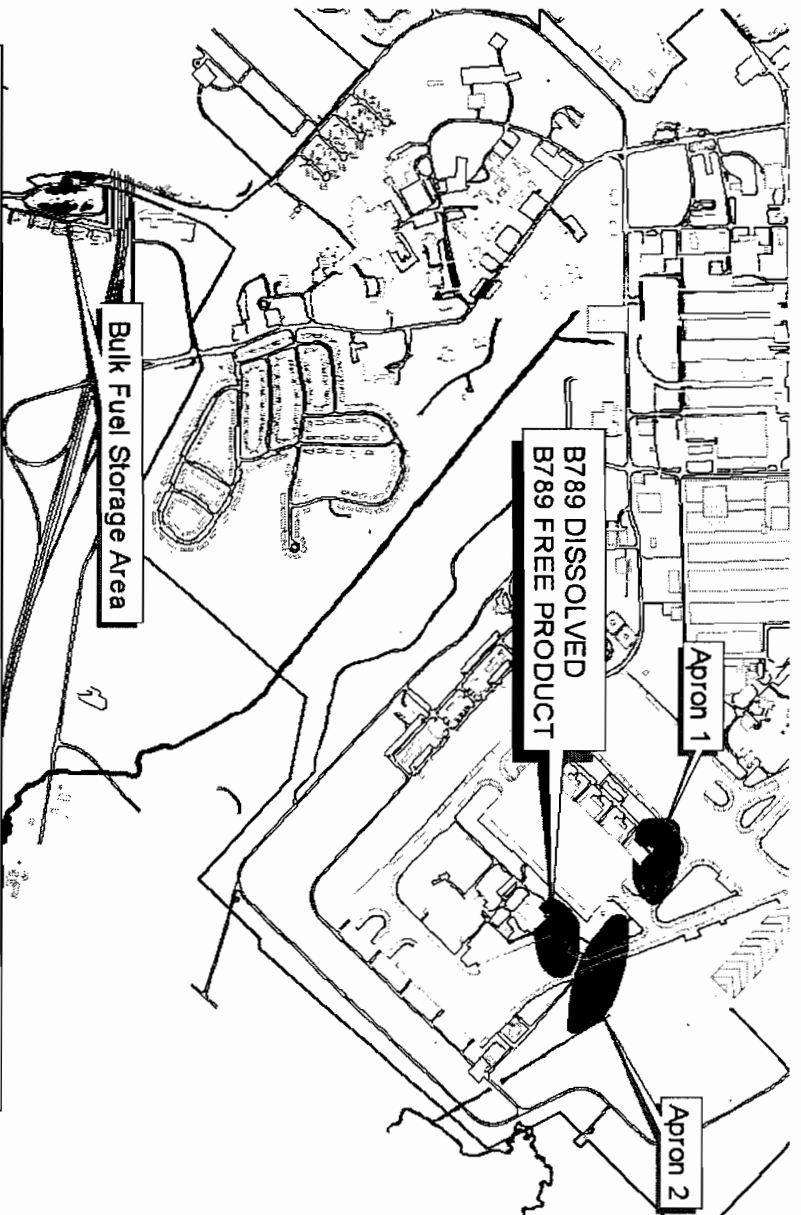


Near Term Target Schedules Chlorinated Plume Remediation

- Additional AOC 9 Investigation – Jun 2007 – Aug 2007
- Proposed Plan Public Meeting – Aug 2007
- Final OBGW ROD signed – Dec 2007
- Remedial Design complete – Feb 2008
- Remedial construction at four sites Spring 2008
- AOC 9 - FS, PP, ROD, and RD complete in 2008
- AOC 9 remedial construction in 2009



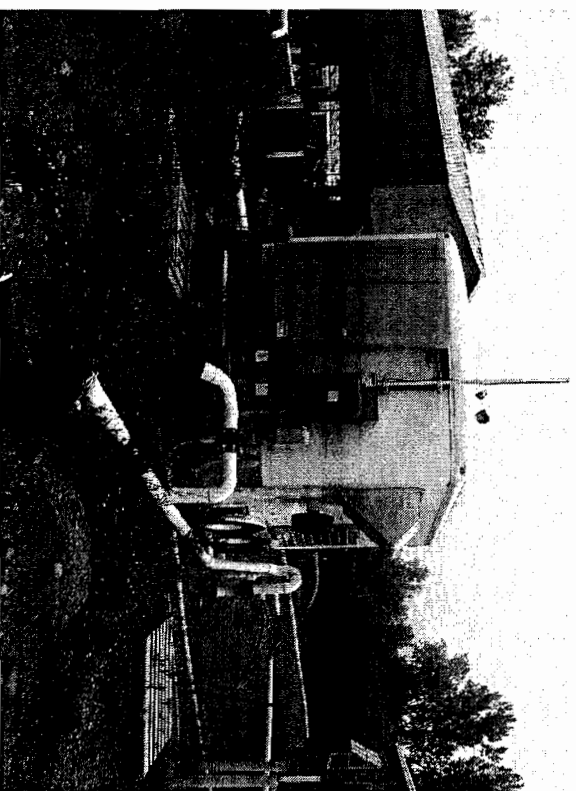
Performance Based Contracting Petroleum Remediation



Awarded to The FPM Group - February 14, 2006

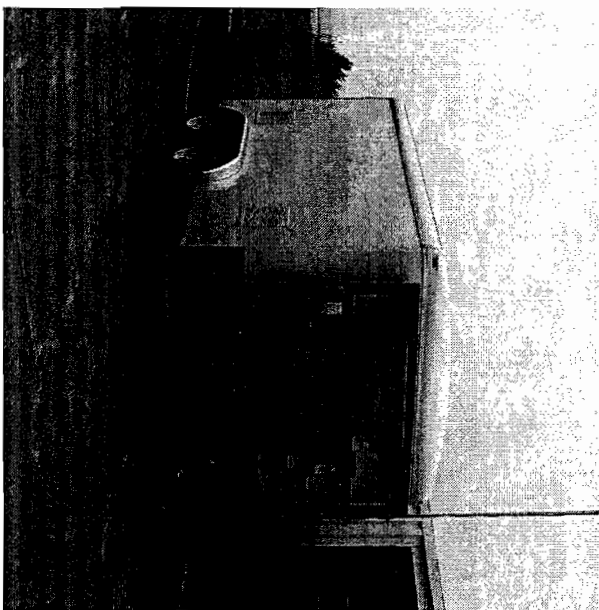
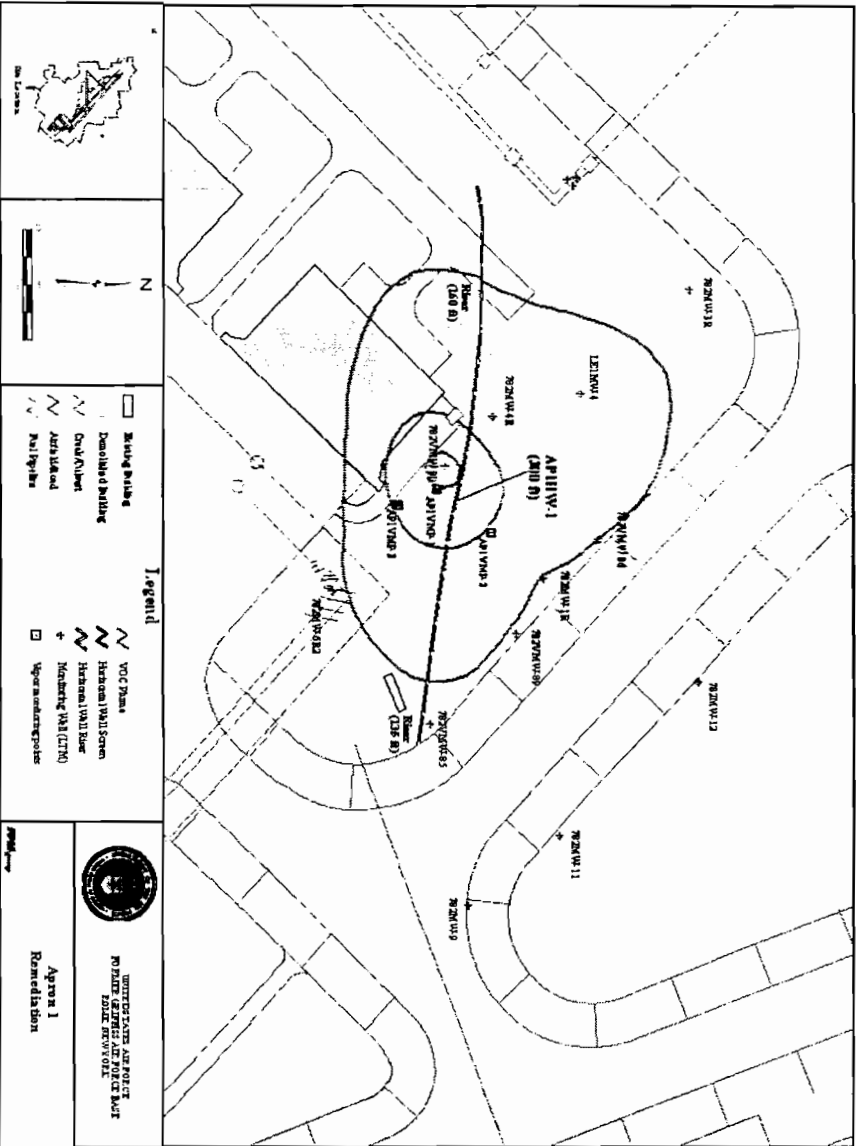
Performance Based Contracting Petroleum Remediation – Overview

- Construction Completed –
December 2006
 - Apron 1 Groundwater
 - 300' Horizontal Biosparging Well
 - Apron 2 Groundwater
 - 300' Horizontal Biosparging Well
 - B789 Groundwater & Free-product
 - 200' Horizontal Biosparging Well
 - 9 Free-product Recovery (FPR) Wells
 - BFSAs Groundwater
 - 3 Horizontal Biosparging Wells (250' – 400')



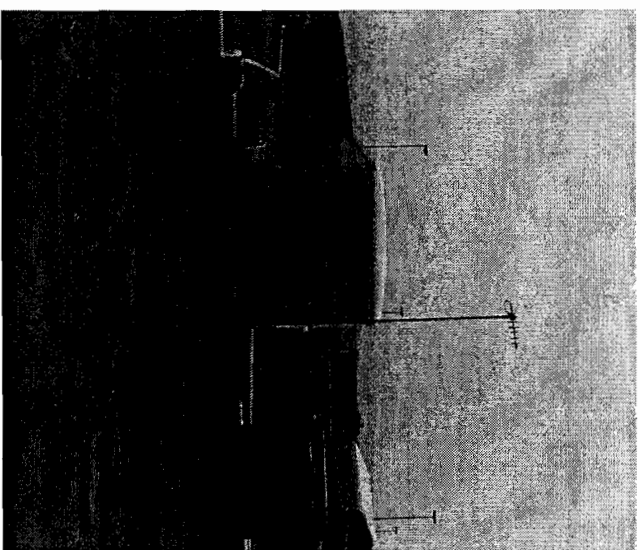
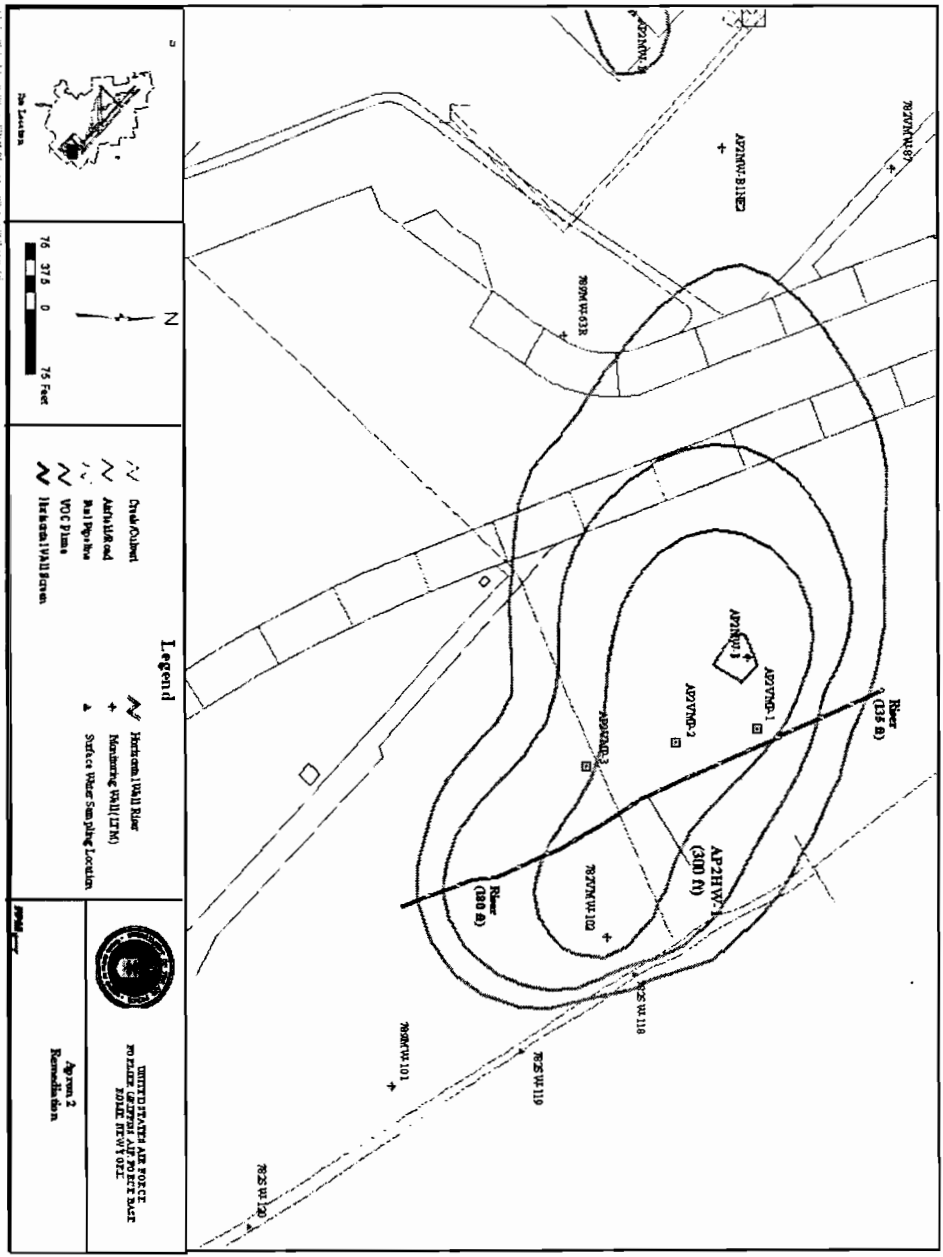
Apron 1

- Biosparging started in January 2007 at horizontal well AP1HW-1.



Apron 2

- Biosparging started in January 2007 at horizontal well AP2HW-1

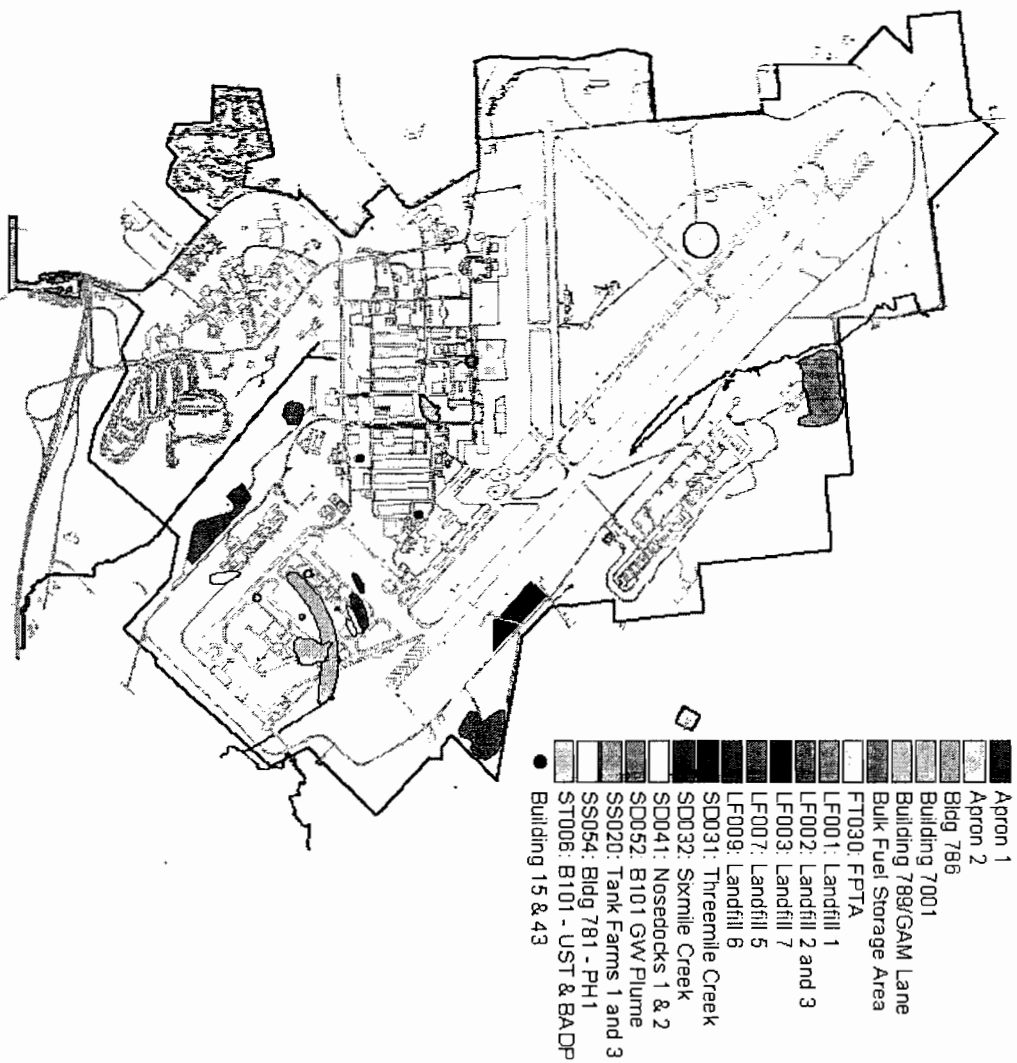


Performance Based Contracting Long Term Monitoring Sites

SITE	LTM	RA-O
LF01 – Landfill 1	✓	✓
LF02 – Landfill 2/3	✓	✓
LF03 – Landfill 7	✓	✓
LF07 – Landfill 5	✓	✓
LF09 – Landfill 6	✓	✓
SD31 – Three Mile Creek	✓	
SD32 – Six Mile Creek	✓	
SS20 – Tank Farms 1&3 (Spill # 9111733)	✓	
FT30 – FPTA (Spill # 9510187)	✓	

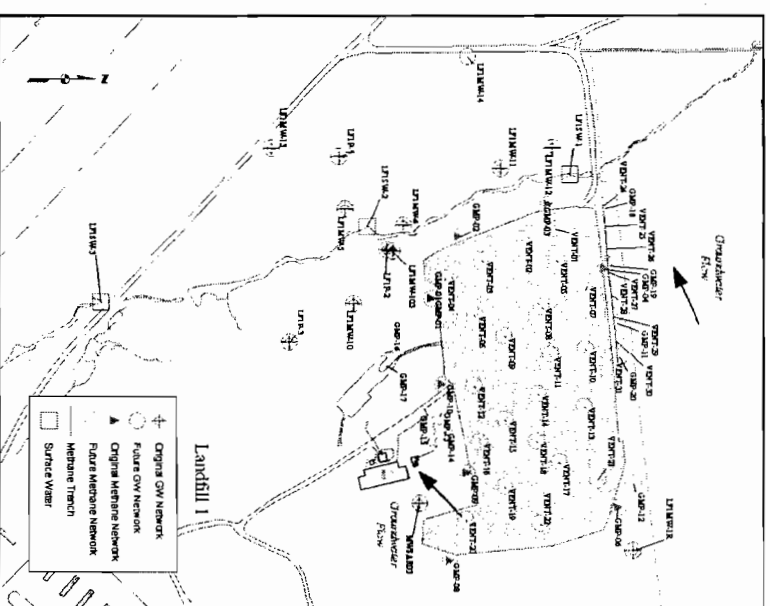
SITE	LTM	RA-O
ST26 – Building 43 (Spill #s 93130760 & 9204543)	✓	
SD52 – Building 101	✓	
SS54 – Pumphouse 1 (Spill # 9202658)	✓	✓
Apron 1 / Nosedocks 1&2 (Spill # 9707954)	✓	✓
Apron 2 (Spill # 9713631)	✓	✓
Building 15 (Spill# 9709366)	✓	
Building 786 (Spill # 8910168)	✓	
Building 789 (Spill # 9810713)	✓	
Building 7001 (Spill # 9706957)	✓	
BFSA (Spill #s 9507364, 9810949 & 2009824)	✓	✓

Performance Based Contracting Long Term Monitoring Sites



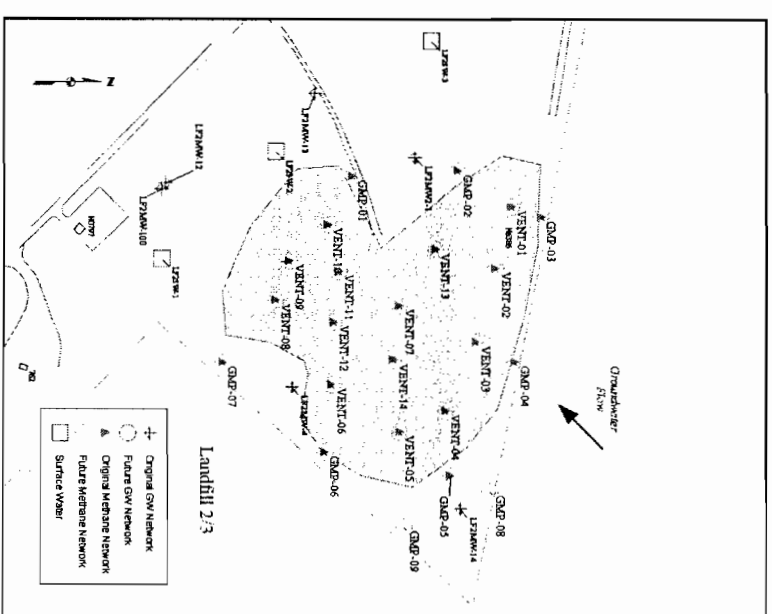
Long Term Monitoring Landfill 1

- Sampling Locations
 - Groundwater, surface water, soil gas
- Sampling Frequency
 - Semi-Annual
- Primary Contaminants
 - Groundwater: VOCs, metals, landfill leachate indicators
 - Gas: methane
- On-going Maintenance
 - Landfill O&M program
 - Land-Use Controls
- Current Status
 - Continue methane gas monitoring
 - Optimize monitoring network



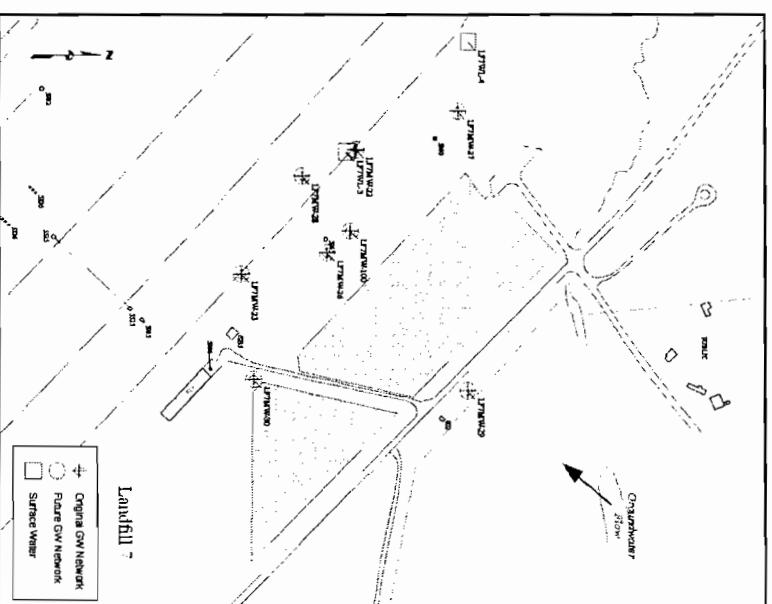
Long Term Monitoring Landfill 2/3

- Sampling Locations
 - Groundwater, surface water, soil gas
- Sampling Frequency
 - Semi-Annual
- Primary Contaminants
 - Groundwater: None
 - Surface water: metals, landfill leachate indicators
 - Gas: methane
- On-going Maintenance
 - Landfill O&M program
 - Land-Use Controls
- Current Status
 - Continue methane gas monitoring
 - Optimize monitoring network



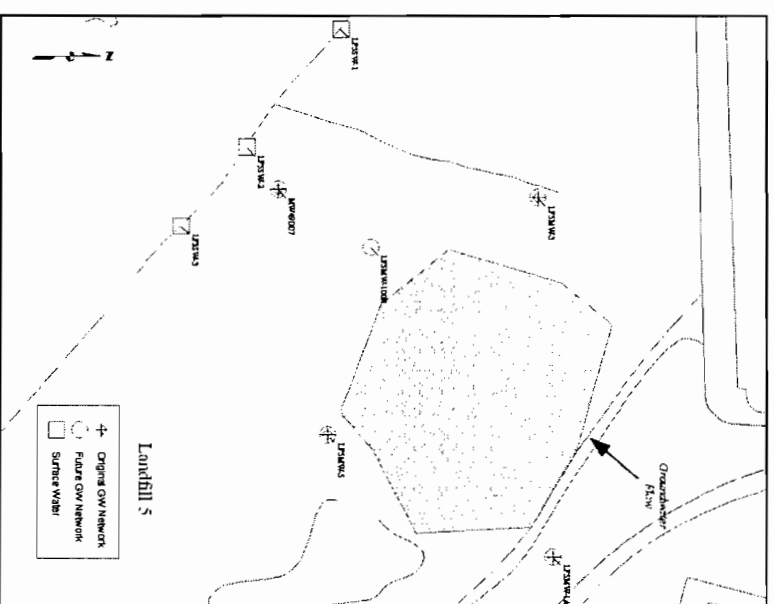
Long Term Monitoring Landfill 7

- Sampling Locations
 - Groundwater, surface water (wetlands)
- Sampling Frequency
 - Semi-Annual
- Primary Contaminants
 - Groundwater: metals, PCBs
 - Surface water: metals
- On-going Maintenance
 - Landfill O&M program
 - Land-Use Controls
- Current Status
 - Optimize monitoring network



Long Term Monitoring Landfill 5

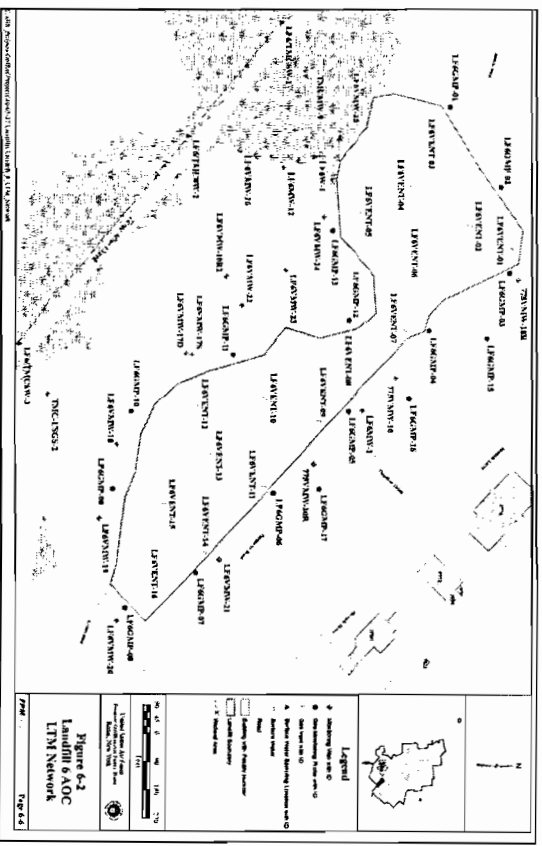
- Sampling Locations
 - Groundwater, surface water
- Sampling Frequency
 - Semi-Annual
- Primary Contaminants
 - Groundwater: None
 - Surface water: metals
- On-going Maintenance
 - Landfill O&M program
 - Land-Use Controls
- Current Status
 - Optimize monitoring network



Long Term Monitoring Landfill 6

Close out Report

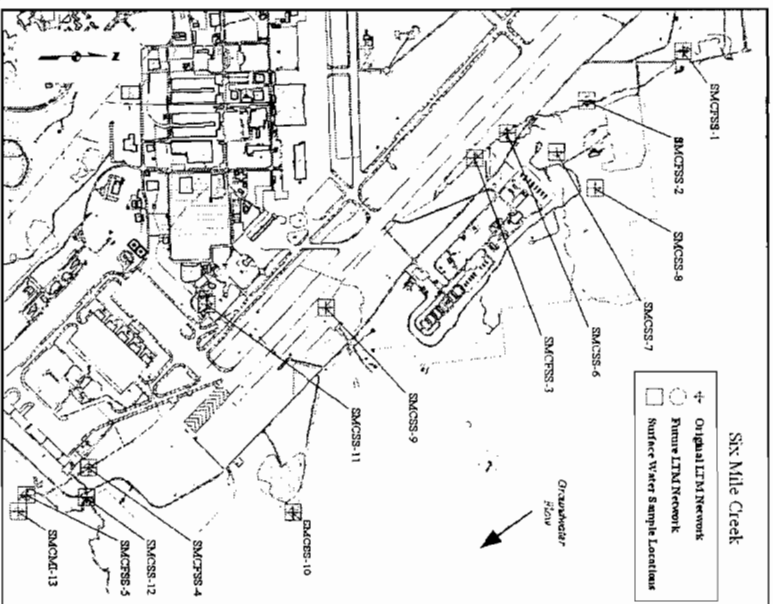
- Sampling Locations
 - Groundwater, surface water, soil gas
- Sampling Frequency
 - Quarterly
- Primary Contaminants
 - Groundwater and Surface water: VOCs, metals, landfill leachate indicators
 - Soil gas: methane
- On-going Maintenance
 - Landfill O&M program
 - Land-Use Controls
- Current Status
 - Continue LTM network



Long Term Monitoring Six Mile Creek

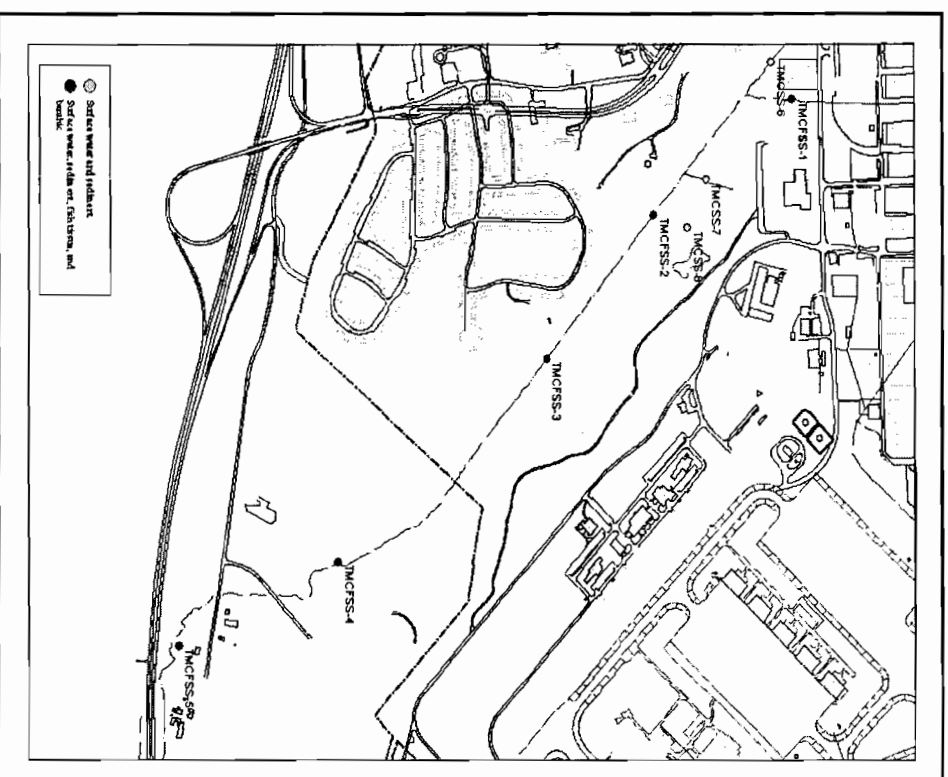
- Sampling Locations
 - Surface water, sediment, fish, benthic
- Sampling Frequency
 - Annual (fish every 3 years)
- Primary Contaminants
 - Surface Water: Benzene (Apron 2)
 - Sediment: SVOCs, PCBs (Upgradient, Rainbow Creek)
 - Fish: None (for human consumption)
- Current Status
 - Add downstream benthic assessment location

at next sampling
PEC FW



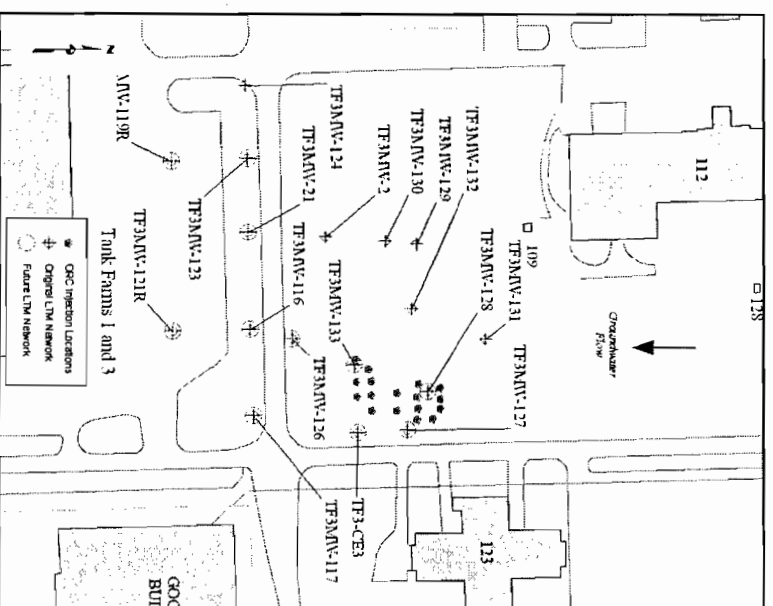
Long Term Monitoring Three Mile Creek

- Sampling Locations
 - Surface water, sediment, fish, benthic
- Sampling Frequency
 - Annual (fish every 3 years)
- Primary Contaminants
 - Surface Water: Pesticides and metals
 - Sediment: VOCs, PCBs, Pesticides, and metals
 - Fish: results are pending
- Current Status
 - LTM began Fall 2006, a report is pending



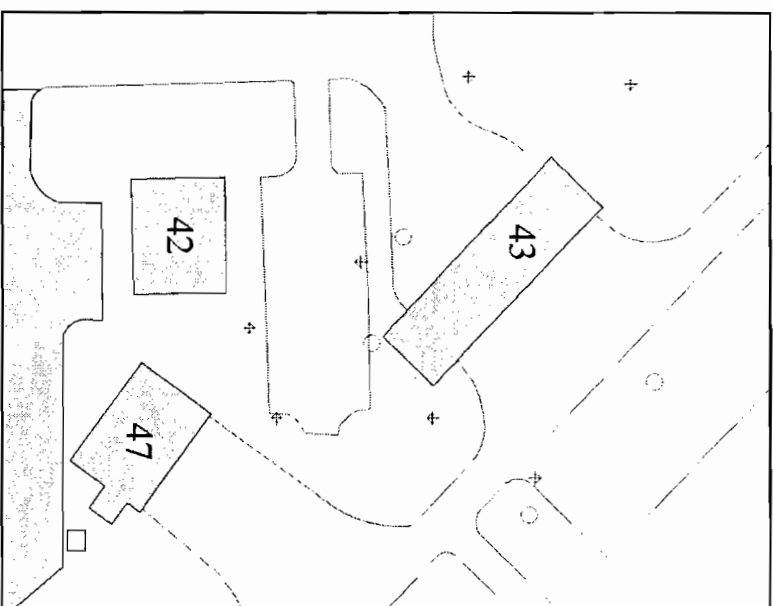
Long Term Monitoring Tank Farms 1&3

- Sampling Locations
 - Groundwater
- Sampling Frequency
 - Annual/Quarterly
- Primary Contaminants
 - Groundwater: Petroleum VOCs (stable/declining)
- Current Status
 - ORC Injection & In-well Application
 - Optimize monitoring network



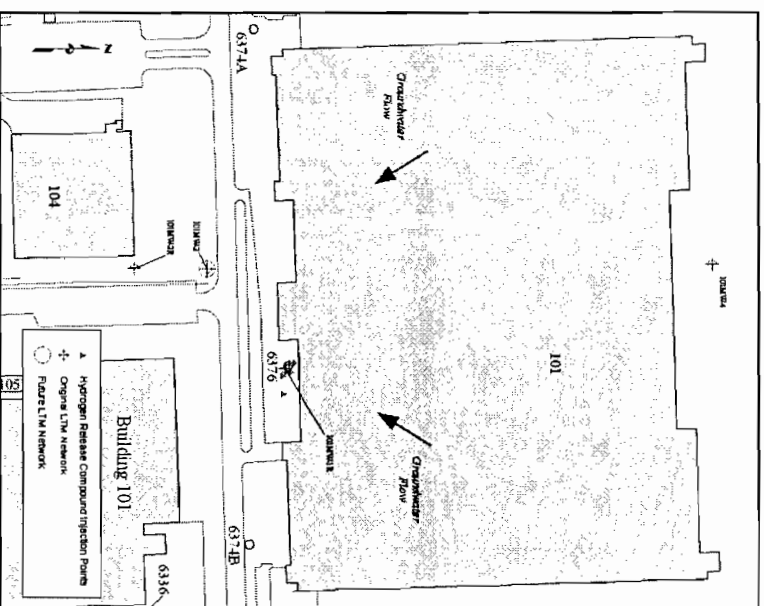
Long Term Monitoring Building 43

- Primary Contaminants
 - Groundwater: VOCs (documented absence)
- Current Status
 - Soil removal of petroleum-contaminated soil
 - Spill closure pending



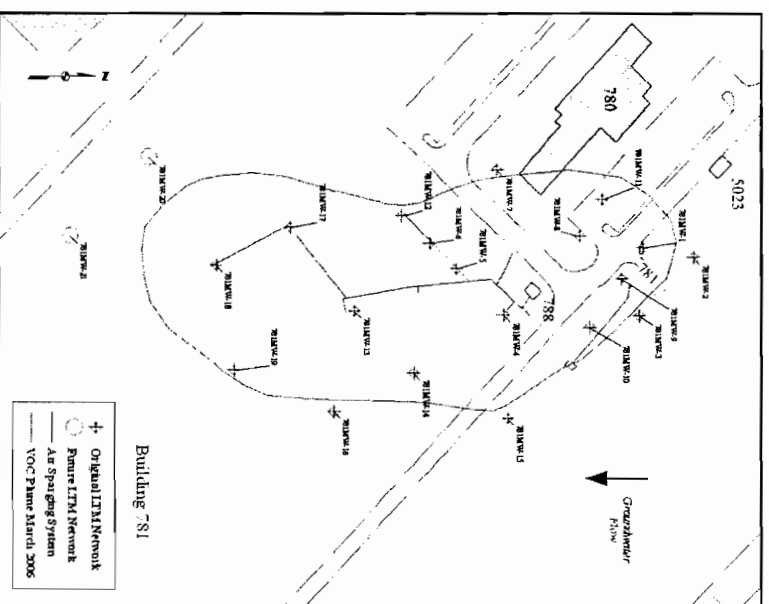
Long Term Monitoring Building 101

- Sampling Locations
 - Groundwater
- Sampling Frequency
 - Quarterly
- Primary Contaminants
 - Groundwater: Chlorinated VOCs (stable/declining)
- Current Status
 - HRC Injection & In-well application



Long Term Monitoring Pumphouse 1

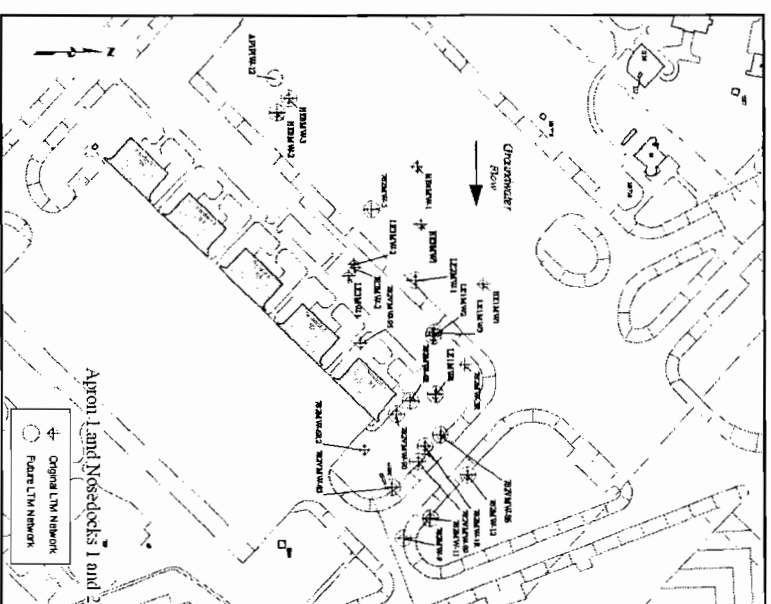
- Sampling Locations
 - Groundwater
- Sampling Frequency
 - Annual/Quarterly
- Primary Contaminants
 - Groundwater: Petroleum VOCs
- On-going Maintenance
 - Bioventing/biosparging system
- Current Status
 - Bioventing/biosparging system expansion
 - Optimize monitoring network



Long Term Monitoring

Apron 1 / Nosedocks 1&2

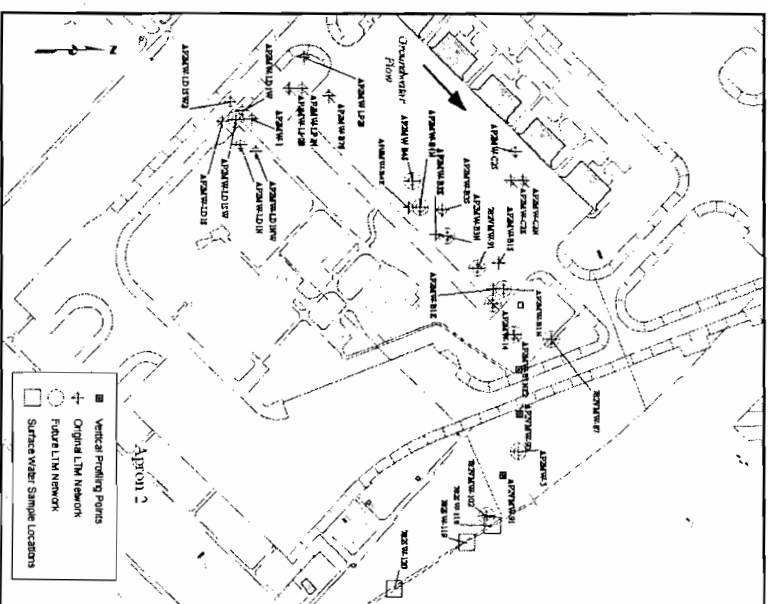
- Sampling Locations
 - Groundwater
- Sampling Frequency
 - Annual/Semi-annual/Quarterly
- Primary Contaminants
 - Groundwater: Petroleum VOCs (declining/stable)
- On-going Maintenance
 - Bioventing system
 - Biosparging system
- Current Status
 - Optimize monitoring network
 - Remediation system (Petroleum Remediation PBC)



Long Term Monitoring

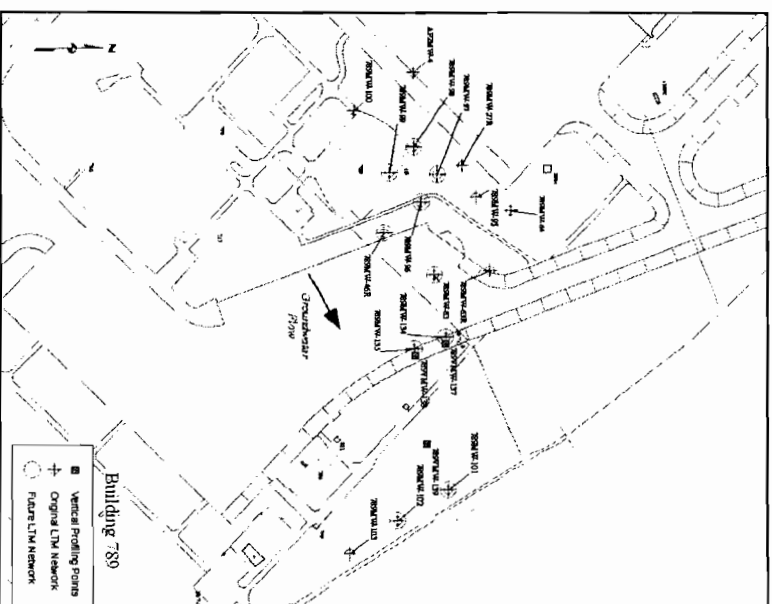
Apron 2

- Sampling Locations
 - Groundwater, surface water
- Sampling Frequency
 - Annual/Semi-annual/Quarterly
- Primary Contaminants
 - Groundwater: Petroleum VOCs
 - Surface Water: Minor benzene
- On-going Maintenance
 - Bioventing system
 - Biosparging system
- Current Status
 - Optimize monitoring network
 - Mobile enhanced vacuum free-product recovery
 - Remediation system (Petroleum Remediation PBC)



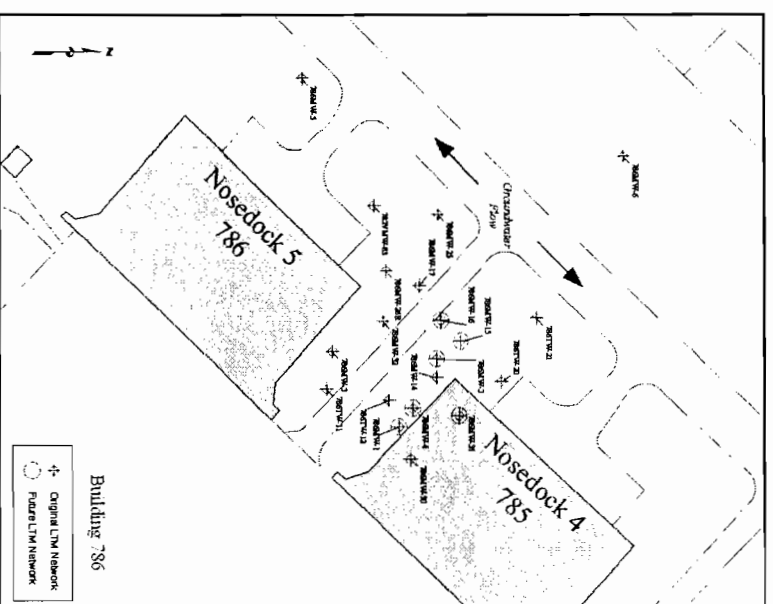
Long Term Monitoring Building 789

- Sampling Locations
 - Groundwater, surface water
- Sampling Frequency
 - Annual/Semi-Annual/Quarterly
- Primary Contaminants
 - Groundwater: Petroleum VOCs
 - Free-Product
- On-going Maintenance
 - Interim free-product recovery system
 - Biosparging system
- Current Status
 - Optimize monitoring network
 - Mobile enhanced vacuum free-product recovery
 - Remediation system (Petroleum Remediation PBC)



Long Term Monitoring Building 786

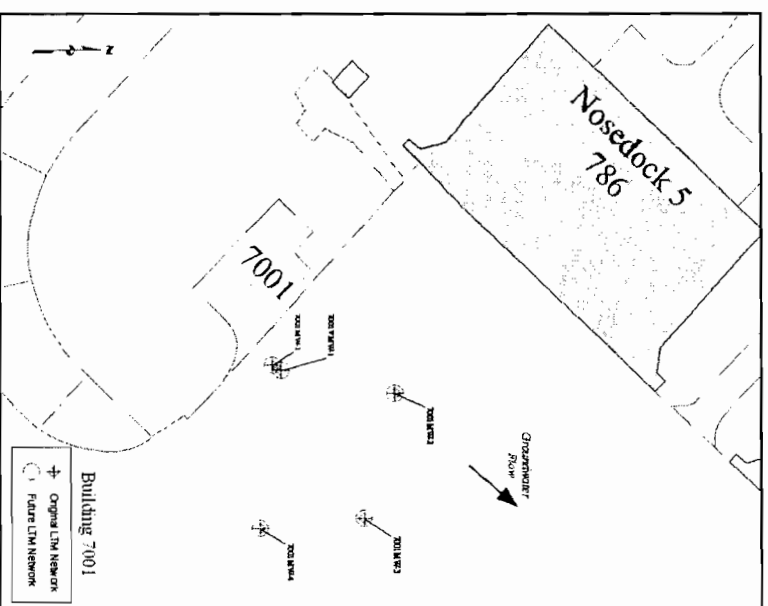
- Sampling Locations
 - Groundwater
- Sampling Frequency
 - Annual/Quarterly
- Primary Contaminants
 - Groundwater: Petroleum VOCs (stable)
- Current Status
 - Optimize monitoring network
 - Mobile enhanced vacuum groundwater recovery



Long Term Monitoring Building 7001

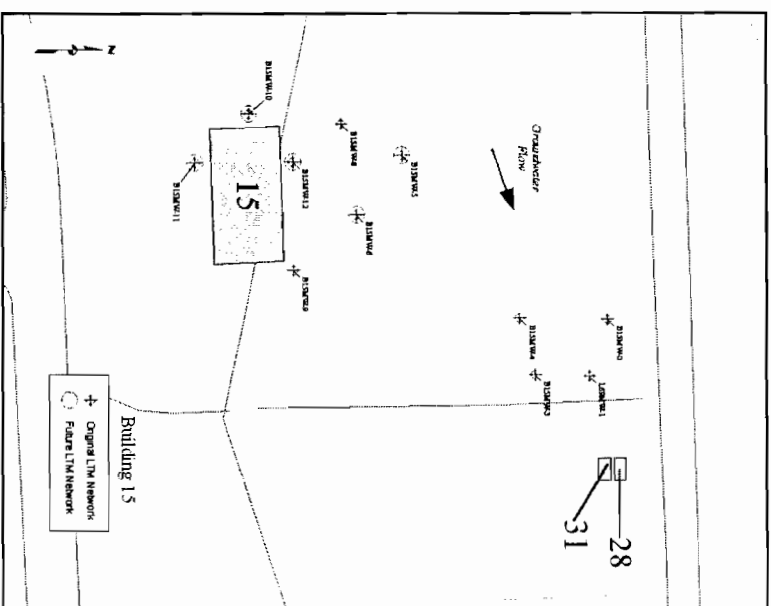
- Sampling Locations
 - Groundwater
- Sampling Frequency
 - Annual/Quarterly
- Primary Contaminants
 - Groundwater: Petroleum VOCs (stable/declining)
- Current Status
 - Optimize monitoring network
 - iSOC gas infusion

Report system



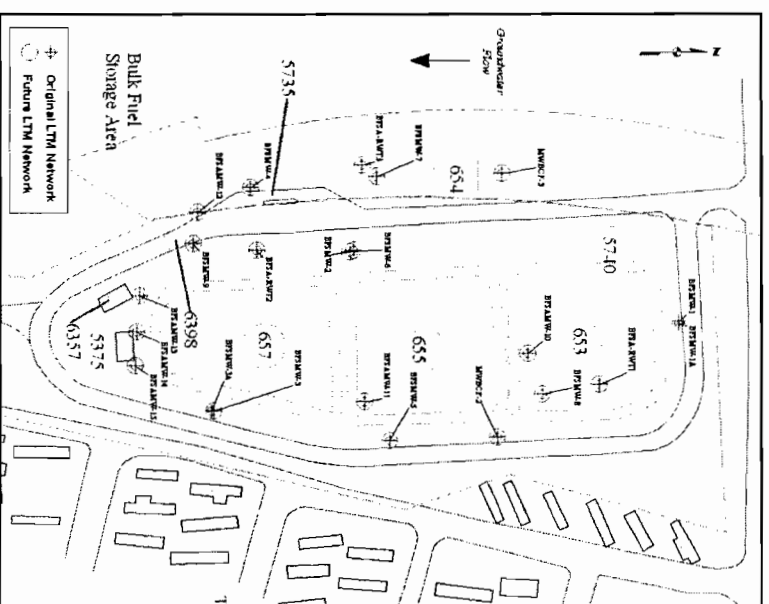
Long Term Monitoring Building 15

- Sampling Locations
 - Groundwater
- Sampling Frequency
 - Semi-annual/Quarterly
- Primary Contaminants
 - Groundwater: Petroleum VOCs (stable)
- Current Status
 - Optimize monitoring network
 - Mobile enhanced vacuum groundwater recovery



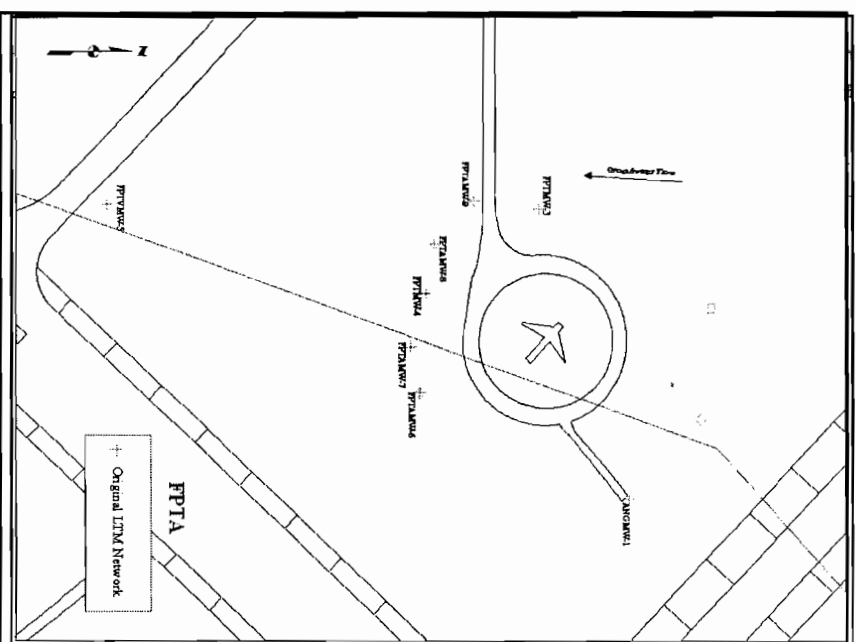
Long Term Monitoring BFSA

- Sampling Locations
 - Groundwater
- Sampling Frequency
 - Annual/Quarterly
- Primary Contaminants
 - Groundwater: Petroleum VOCs
- On-going Maintenance
 - Biosparging system
- Current Status
 - Optimize monitoring network
 - Remediation system (Petroleum Remediation PBC)



Long Term Monitoring FPPTA

- Sampling Locations
 - Groundwater
- Sampling Frequency
 - Annual
- Primary Contaminants
 - Groundwater: Petroleum VOCs (declining)
- Current Status
 - Recommendation for spill closure





Landfarming

- Apron 1 – 80,000+ cubic yards under final contract
 - 50,000+ cubic yards remediated, to be utilized on-base
 - Remainder set for further remediation or off-site disposal
- Contract award pending
- 2 – 3 year duration until completion


FUTURE PROPOSED PLANS AND RECORDS OF DECISION

Proposed Plans Vapor Intrusion Impact

- Building 101 BADP
- Tank Farms 1 & 3
- Building 133 UST
- Fire Protection Training Area
- Building 110
- Building 100

Proposed Plans under Development

- On-Base Groundwater - Revised Draft Final issued May 2007
- AOI IRAs, including Drywell 100 under review
- Coal Yard Storage Area / Pumphouse 5 under review
- Small Arms Range complete, final ROD pending

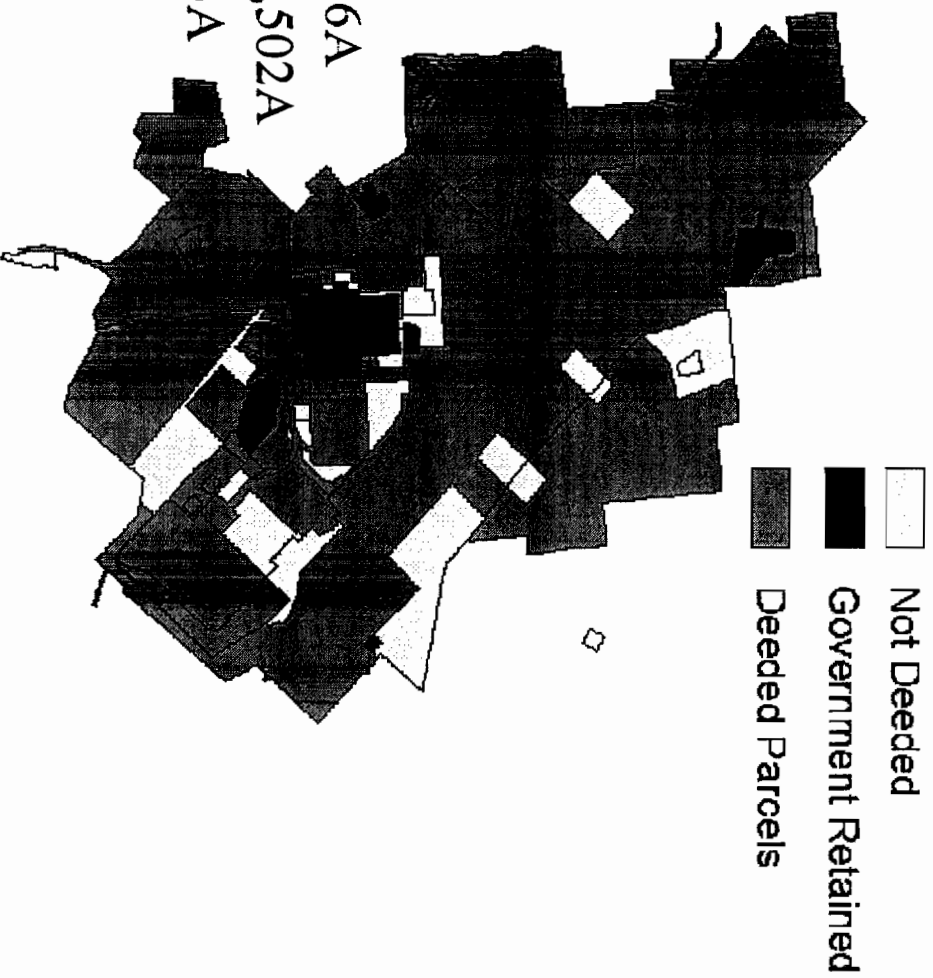


FUTURE PROPOSED PLANS AND RECORDS OF DECISION

Proposed Plans 2007 Submittal

- Building 43
- Nosedocks 1 & 2
- Landfill 1 ROD Amendment

Property Transfer Status



Total acres: 3,638A

Government Retained: 136A

Acres to be transferred: 3,502A

Transferred to date: 3,093A

Acres remaining: 409A



Property Transfer






- Draft documentation issued for:
 - Communication Sites 1 & 2; Credit Union
 - GSA Site visit completed
 - Parcel F5
 - Early Transfer Parcels
 - Farmhouses
 - Landfill 2/3 and Landfill 7

Early transfer parcels are delayed pending resolution of vapor intrusion discussions



Property Transfer



-  DEEDED
-  RETAINED
-  PLANNED
FOSET
-  DEPARTMENT OF
INTERIOR
-  PUBLIC SALE



GLDC UPDATE

- Multi-Modal Grant
- County Airport at Griffiss
- Griffiss Development Projects





QUESTIONS AND COMMENTS