
*Idaho Cleanup Project Progress
Citizens Advisory Board
January FY 2011 Status*

James Cooper
Department of Energy
Idaho Operations Office



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Idaho Cleanup Project Scope – ARRA Work Included

- Transuranic Waste Disposition
- Advanced Mixed Waste Treatment Project
- Waste Area Group 7 (Radioactive Waste Management Complex)
 - Subsurface Disposal Area Record of Decision
 - Accelerated Retrieval Project Interim Actions
- Idaho CERCLA Disposal Facility
- CERCLA Remediation
 - Waste Area Group 1 – Test Area North
 - Waste Area Group 3 – Idaho Nuclear Technology and Engineering Center
 - Waste Area Group 10 – Site-wide Miscellaneous Sites/Snake River Plain Aquifer



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Idaho Cleanup Project Scope ARRA Work Included (con't)

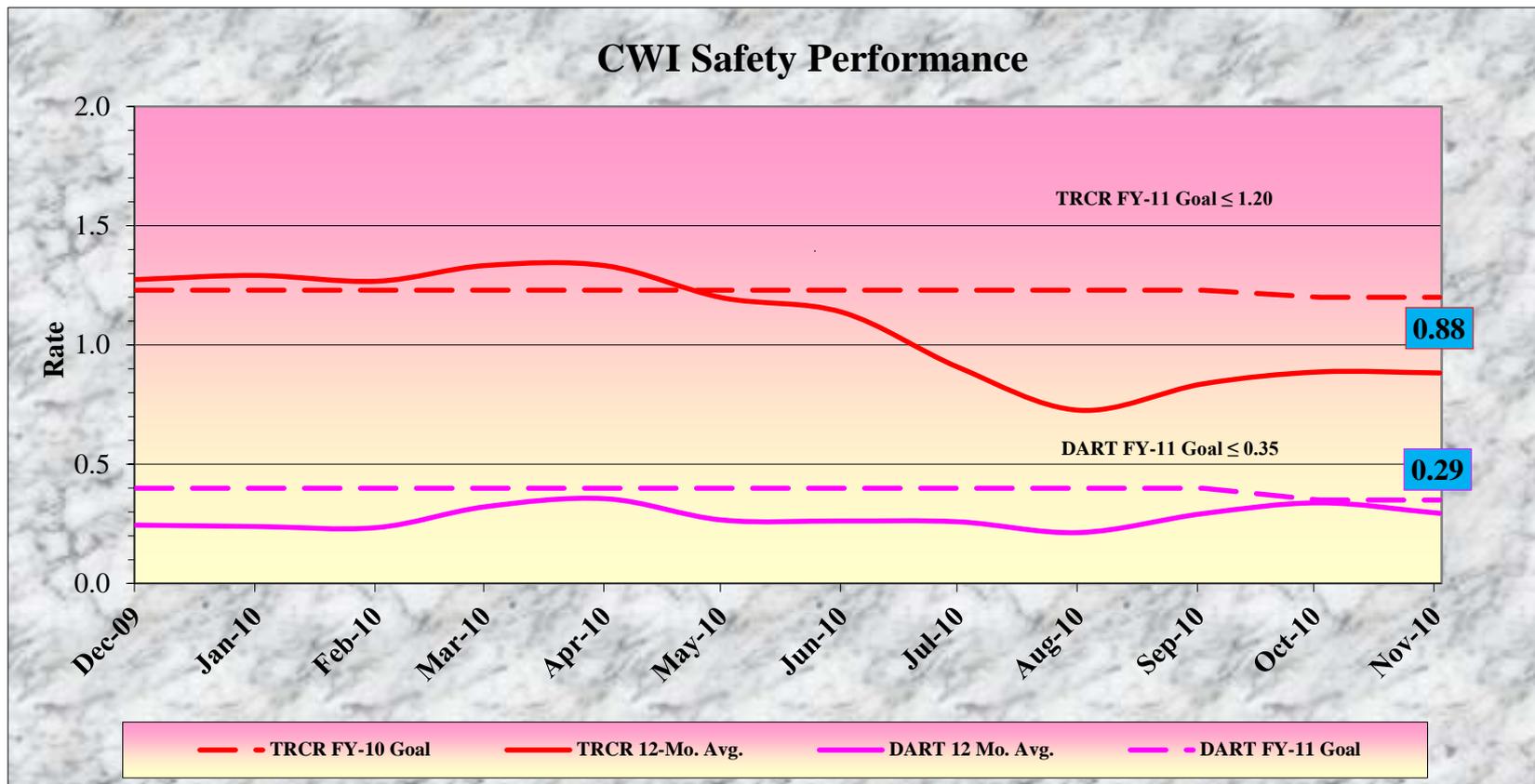
- Decontamination and Decommissioning
 - Test Area North (Completed)
 - Advanced Test Reactor (ATR) Complex
 - Idaho Nuclear Technology and Engineering Center (INTEC)
 - Radioactive Waste Management Complex (RWMC)
 - Power Burst Facility (ARRA) (Completed)
 - Materials and Fuels Complex (ARRA)
- Nuclear Materials Completion (Completed)
- Integrated Waste Treatment Unit (Sodium-Bearing Waste)
- INTEC Liquid Waste Treatment Facility (Tank Farm Closure)
- Spent Nuclear Fuel Disposition
- Calcine Disposition



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Safety Performance - CWI



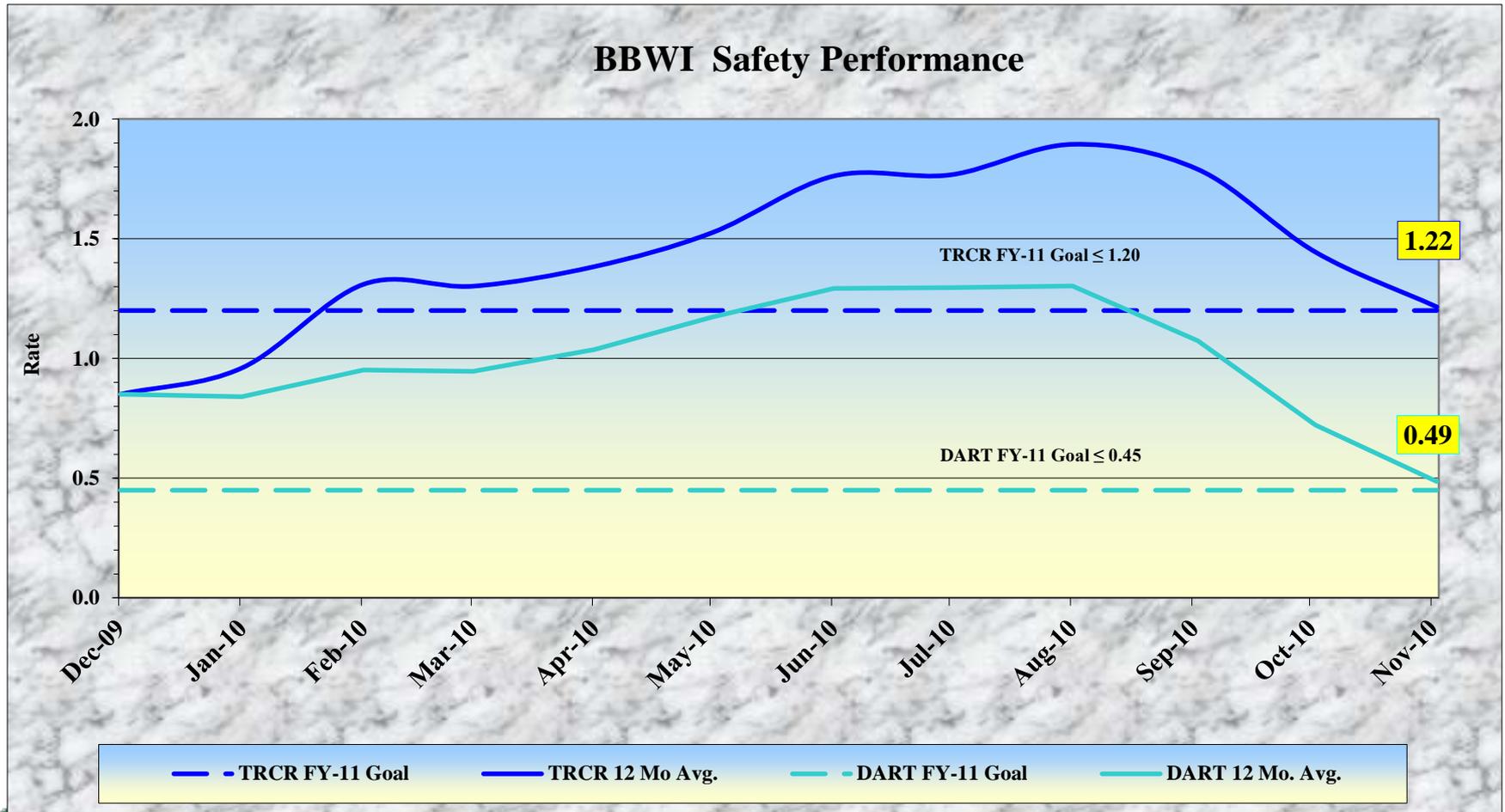
* Rate of occurrence per 200,000 man hours worked



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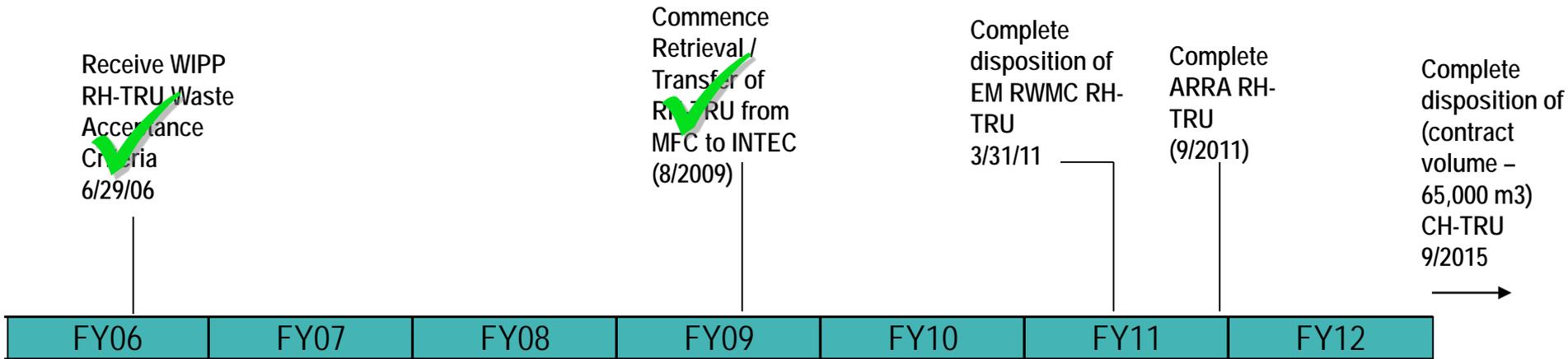
Safety Performance - AMWTP



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Transuranic Waste Disposition Project



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Transuranic Waste Disposition

Accomplishments Since September

- Surpassed 231 remote handled (RH) transuranic (TRU) waste shipments to the Waste Isolation Pilot Plant (WIPP)
- Implemented two shipments per week of uranium-233 waste
- Received all approved RH-TRU waste from the Materials and Fuels Complex
- Awarded small business contract for Sodium Process System Design to TMPC –Energy Solutions, (TES) Environmental Services LLC
- Completed off-site transport, treatment, and disposal of AMWTP U-233 and Hot Chemistry Lab waste (December)

Upcoming Activities

- Complete shipping RH-TRU target (new date March 31, 2011)



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Advanced Mixed Waste Treatment Project

Accomplishments Since October

- Since Oct. 1, 2010 shipped 438 cubic meters of stored transuranic radioactive waste out of Idaho (through Dec. 20, 2010)
- Since May 2005 AMWTP has shipped 6,820 cubic meters of historically managed transuranic waste reclassified as mixed low-level waste out of Idaho (through Dec. 20, 2010)
- Since April 1999, 41,582 cubic meters of stored transuranic and mixed low-level waste have been shipped from INL site (through Dec. 20, 2010)
- Completed all ARRA production and goals by September 30, 2010
- All employees hired with ARRA funding who chose to stay now have full-time jobs at AMWTP

Upcoming Activities

- Continue waste treatment and shipment operations
- Focus on restart of retrieval area



The first shipment of Hanford off-site waste left AMWTP on Thursday, Sept. 23 the 3,560th shipment of radioactive waste to leave Idaho.



More transuranic waste has been shipped by AMWTP – and out of Idaho – than any other site in the DOE Complex. In addition to the stored waste on site, AMWTP has also received and processed waste from four other DOE sites, all within the regulatory requirements contained in the Idaho Settlement Agreement.



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AMWTP – Contract Extension

- Bechtel BWXT Idaho, LLC
Contract Extension
- Period of Performance
 - Oct. 1, 2010 through March 31, 2011
- Scope
 - Characterization, treatment, packaging, shipment and disposal of TRU, MLLW and LLW stored at the Idaho facility



Advanced Mixed Waste Treatment Plant



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Waste Area Group (WAG) 7 Project Objectives

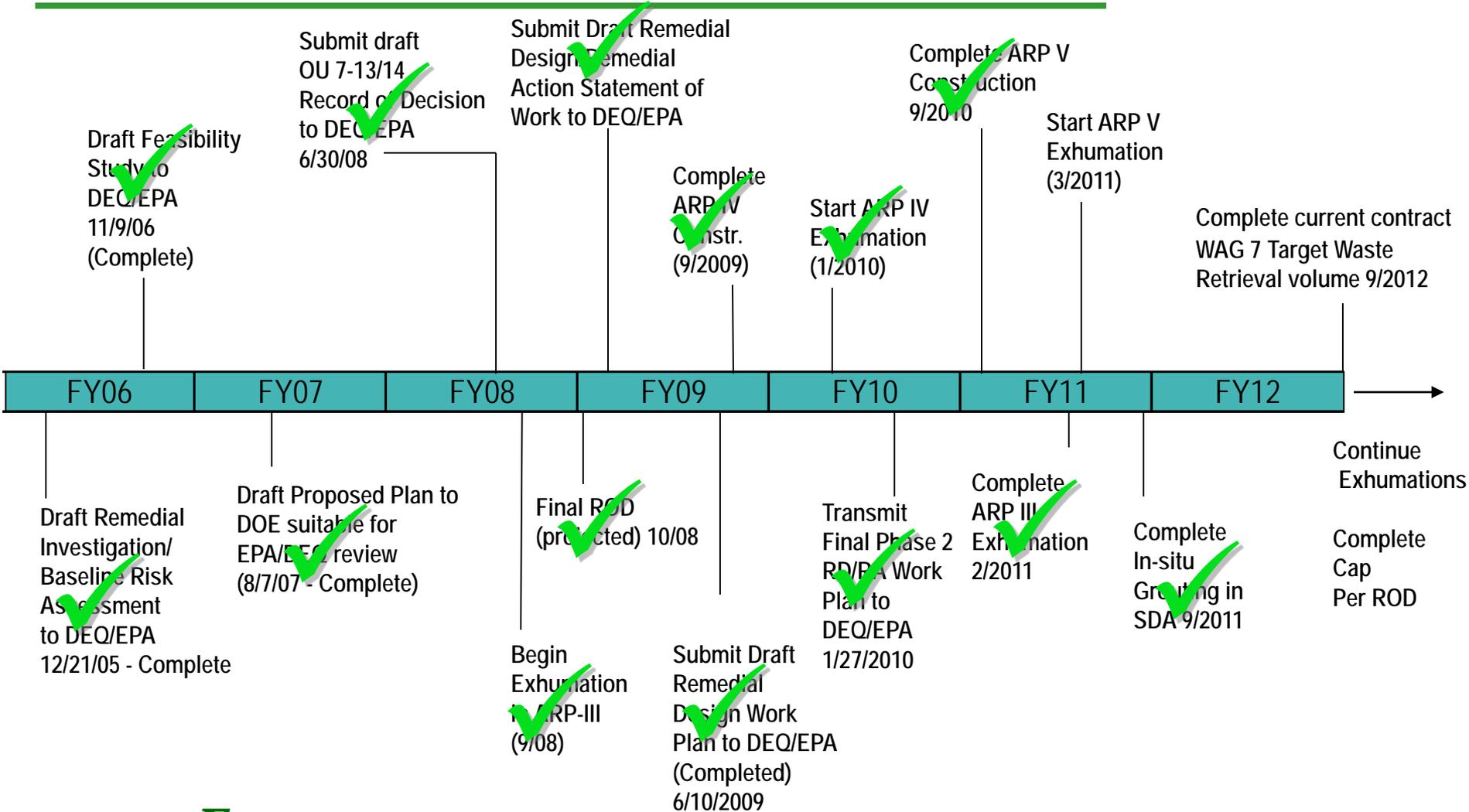
- Complete remediation work in accordance with the Record of Decision (ROD) for OU 7-13/14
- Conduct Target Waste Retrieval at the Accelerated Retrieval Projects (ARP) I, II, III and IV and disposition waste
- Complete in situ grouting of 21 locations (completed)
- Continue subsurface solvent vapor extraction (OCVZ)
- Continue environmental monitoring and institutional controls



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WAG 7 Project



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WAG 7 Project

Accomplishments Since September

- Started Accelerated Retrieval Project V (Pit 9) exhumation operations on December 21
- Continue waste exhumation at ARP IV
- Exhumed and packaged a total of 4,425 m³ of waste material for all ARPs
 - Exhumed 45,700 cubic yards of waste zone materials
 - Packaged 21,274 drums of targeted waste
- Completed 2.0 acres out of 5.69, ahead of schedule, on budget



Accelerated Retrieval Project (ARP) VI

Upcoming Activities

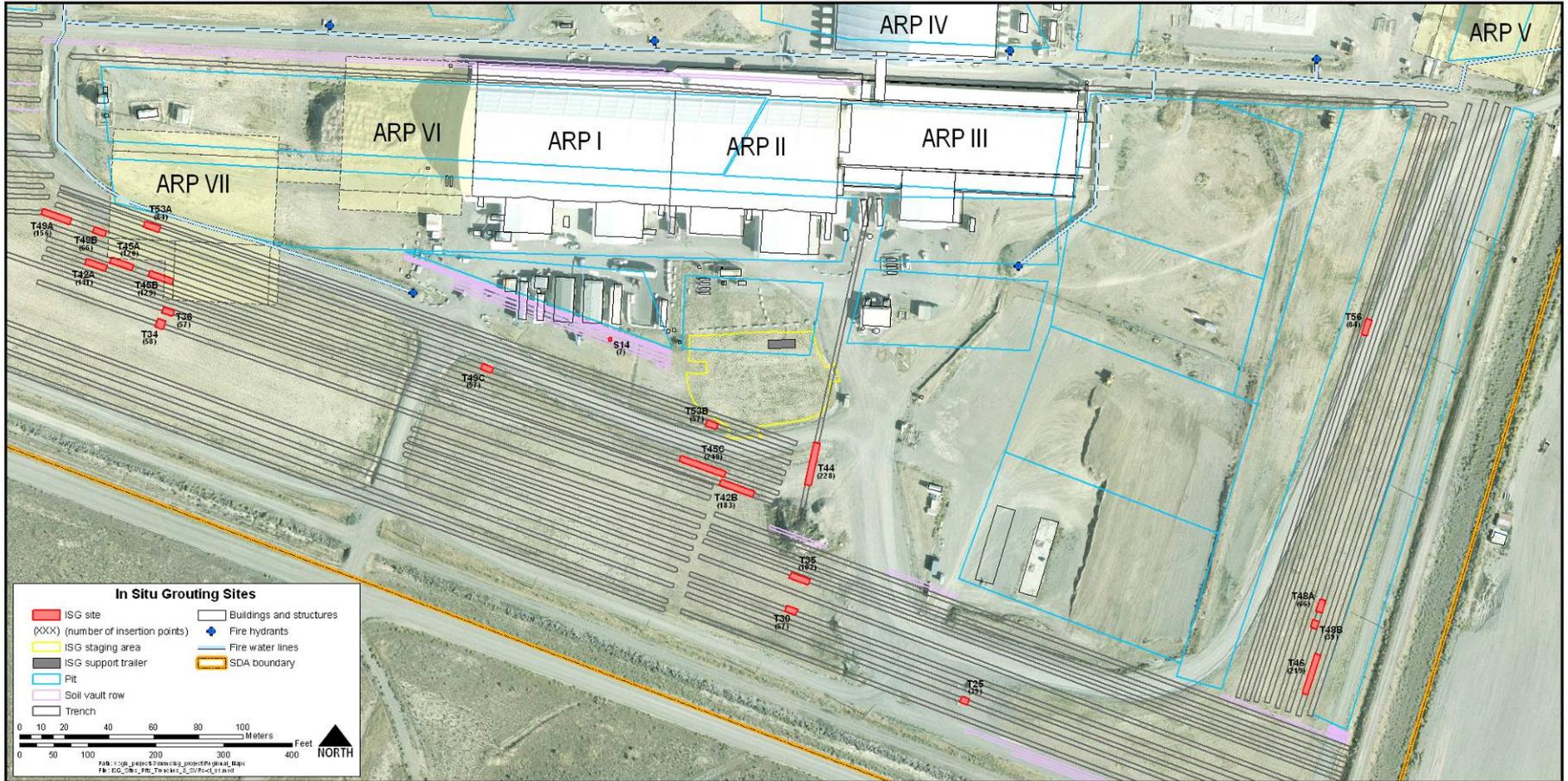
- Complete ARP VI construction
- Complete ARP VII foundation concrete placement



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WAG 7 Project (cont'd)



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Other CERCLA Remediation Project Objectives

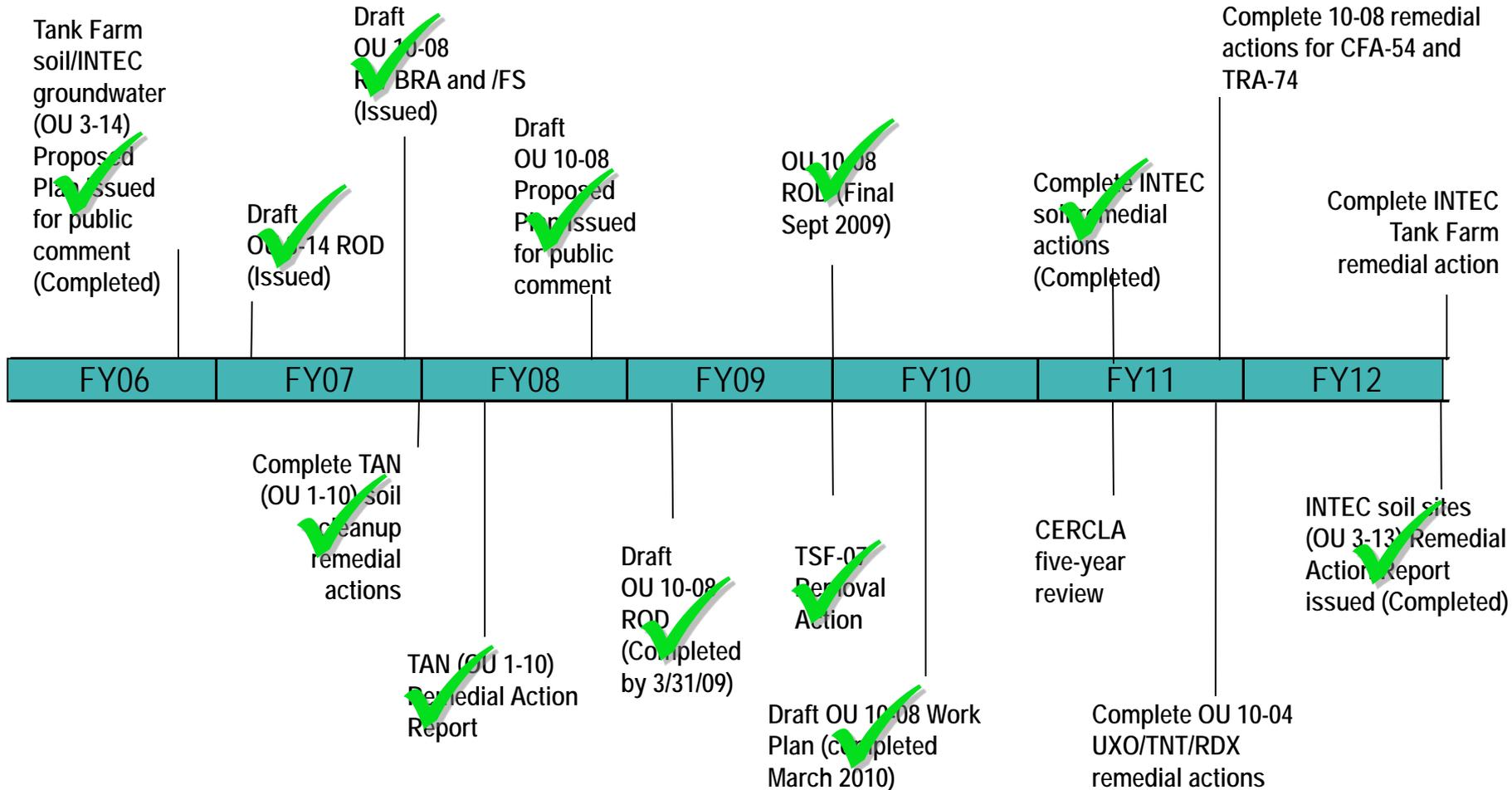
- WAG 1:
 - Continue TAN Groundwater Remediation
- WAG 3:
 - Complete Phase I, II and III of the OU 3-14 Record of Decision (in the near term corrective actions include drainage ditches, low-permeability pavement inside and outside of the tank farm to support the continued reduction of perched water in northern INTEC)
- WAG 10:
 - Maintain site wide Institutional Controls and Maintenance requirements
 - Maintain Groundwater Monitoring program
 - Maintain the site wide CERCLA Ecological Monitoring program
 - Remediate WAG 10 CERCLA sites at CFA and RTC
 - Maintain the New Site Identification Process for future CERCLA sites
 - Remediate unexploded ordnance (UXO) and explosives at designated areas in accordance with the OU 10-04 Record of Decision



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Other CERCLA Remediation Projects



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Other CERCLA Remediation Projects (con't)

Site wide – Waste Area Group 10

Accomplishments Since September

- Completed soil remediation and pipe removal at CFA-54
- Completed soil remediation at TRA-74, metals contamination

Upcoming Activities

- Finalize the five-year review of CERCLA sites
- Revise the Ecological Long-Term Monitoring report



CFA-54 Contaminated Piping



CFA-54 Soil Sack Staging



CFA-54 Soil Sack



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Other CERCLA Remediation Projects (con't)

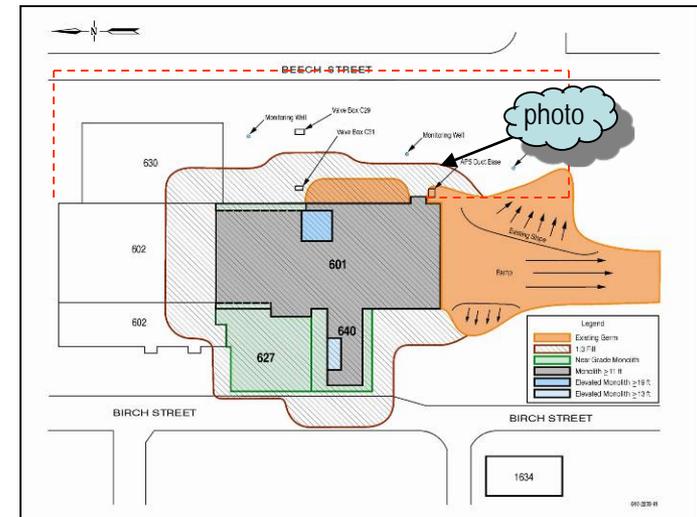
INTEC – Waste Area Group 3

On-Going Activities

- Monitoring perched water levels with radio telemetry
- Monitor water usage to prepare facility water balance

Upcoming Activities

- Complete Phase I of the OU 3-14 remedy - installation of low permeability pavement outside the Tank Farm (FY11)
- Continue to eliminate sources of water releases to the perched water zones



OU 3-14 Phase I paving east of CPP-601



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Other CERCLA Remediation Projects (con't)

Test Area North – Waste Area Group 1

On-Going Activities

- Perform bi-monthly injections to support in situ bioremediation (ISB)
- Operate the New Pump and Treat Facility
- Collect required groundwater samples to track the progress of the remedial action

Upcoming Activities

- Develop 5-year test plan for remedial strategy (FY11)
- Begin operation of the Air Stripper Treatment Unit (ASTU) (FY11)

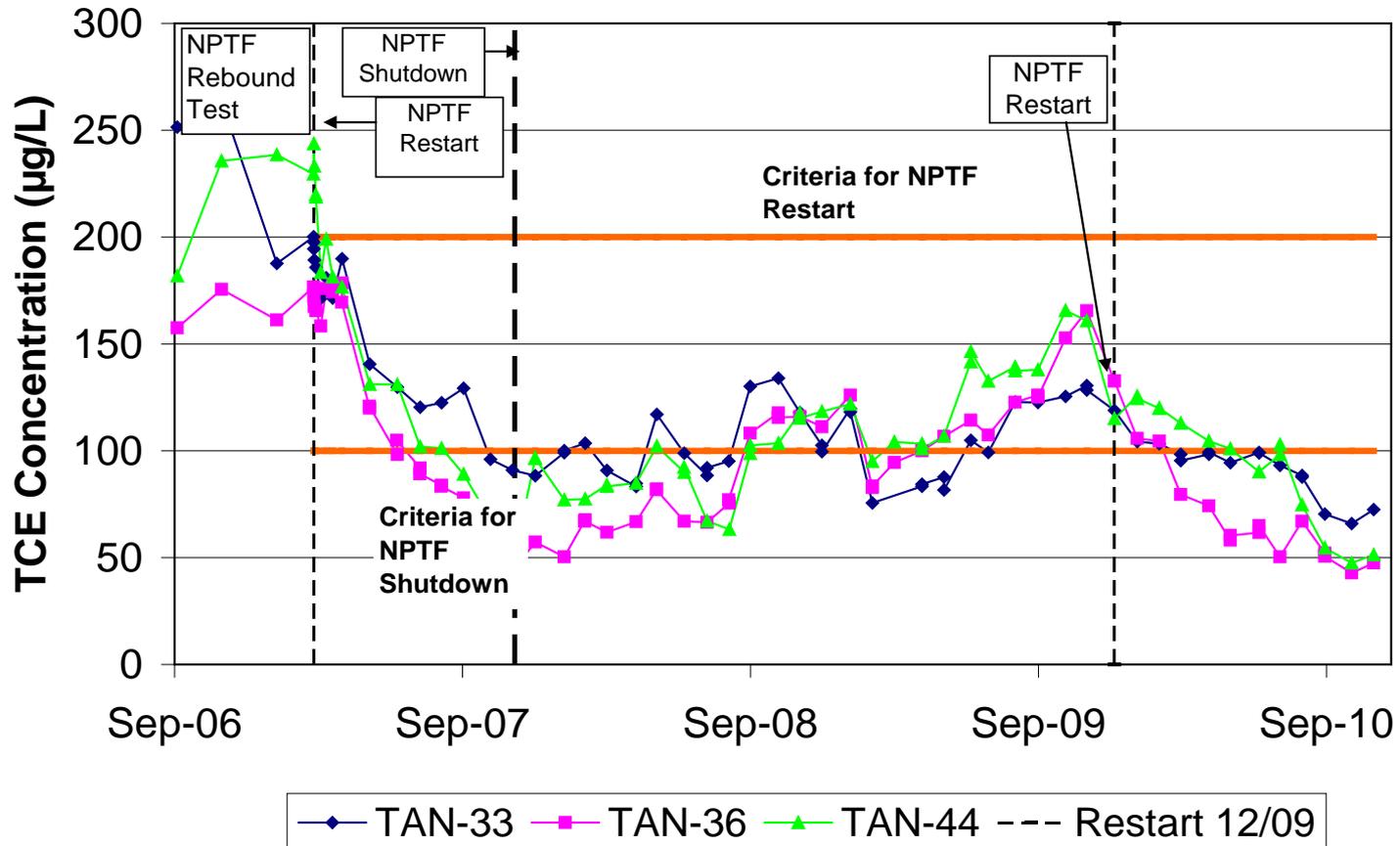


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Other CERCLA Remediation Projects (con't)

TCE Concentrations for the Medial Zone Wells



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Other CERCLA Remediation Projects

Idaho CERCLA Disposal Facility

Accomplishments Since September

- Received 6,955 gallons of aqueous waste
- Received 15,622 cubic yards (28 million pounds) of soil and debris
- Performed in-cell grouting of void spaces

Upcoming Activities

- Receipt and disposal of soil and debris from INTEC, ATRX, MFC and RWMC



Soil disposal in October

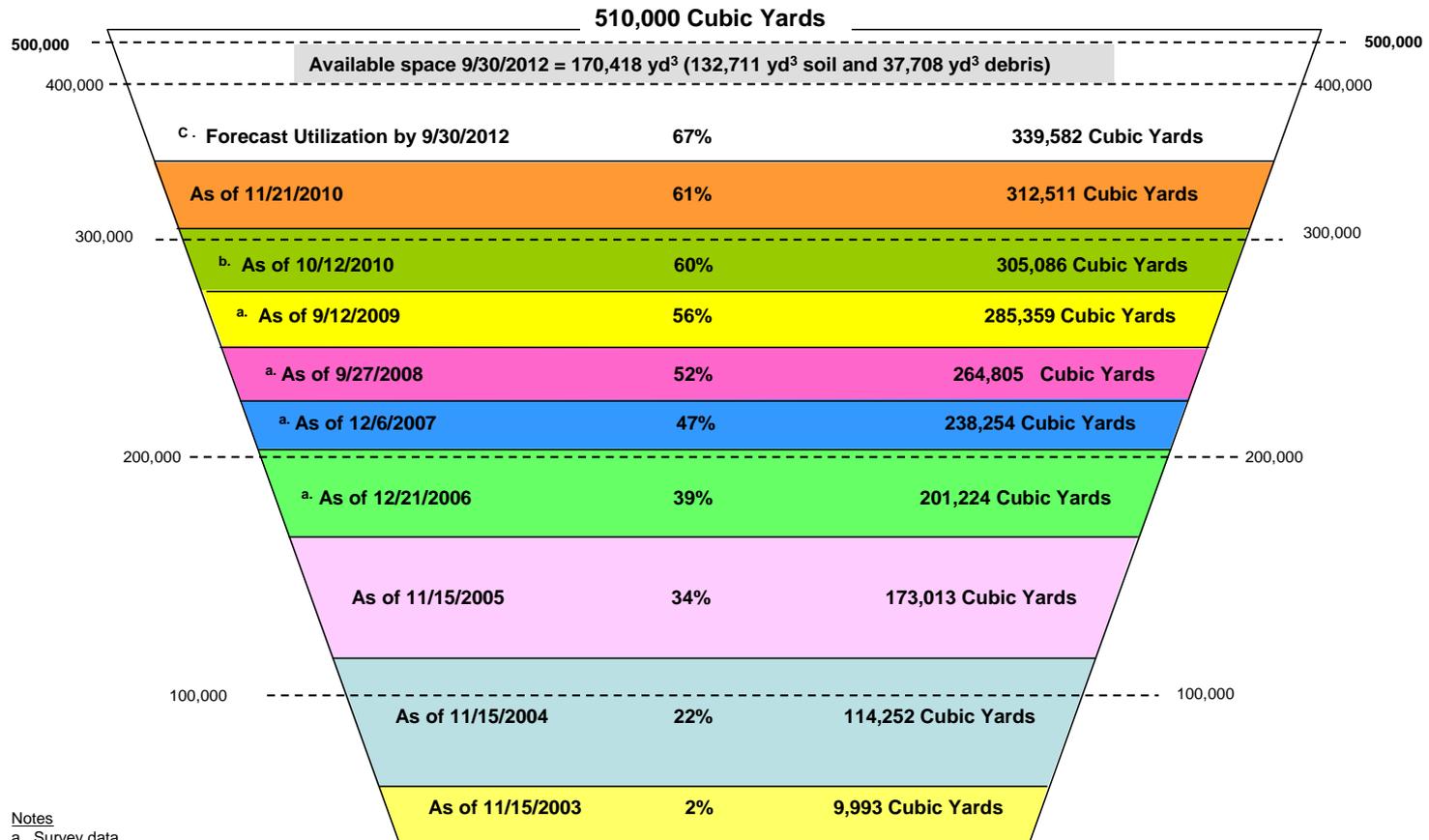


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Other CERCLA Remediation Projects

ICDF Project Landfill Utilization



Available space 9/30/2012 = 170,418 yd³ (132,711 yd³ soil and 37,708 yd³ debris)

Opened 09/15/2003

Updated 12.8.10

Notes

- a. Survey data
- b. Preliminary Survey data
- c. Forecast utilization includes ARRA building debris.

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D&D Objectives

- Decommission and demolish 171 under the baseline program*
 - 163 Completed:
 - 7 high-risk facilities (6 completed)
 - 164 excess facilities (157 completed)
 - (2) Buildings “Demo-Ready”
- Decommission and or demolish 49 “New” facilities under ARRA funding
 - 37 Completed:
 - 4 high risk facilities (1 completed)
 - TRA Hot Cells
 - EBR-II Reactor
 - CPP 601
 - CPP 640 (completed)
 - 39 excess facilities (34 completed)
 - 6 Stretch goals (2 completed)

** All D&D work is now ARRA funded (40 baseline; 49 “New”; Total = 89)*

“69 of 89 completed under ARRA through December 2010”



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ARRA D&D – Advanced Test Reactor Complex (ATRC) / PBF / RWMC Project Objectives

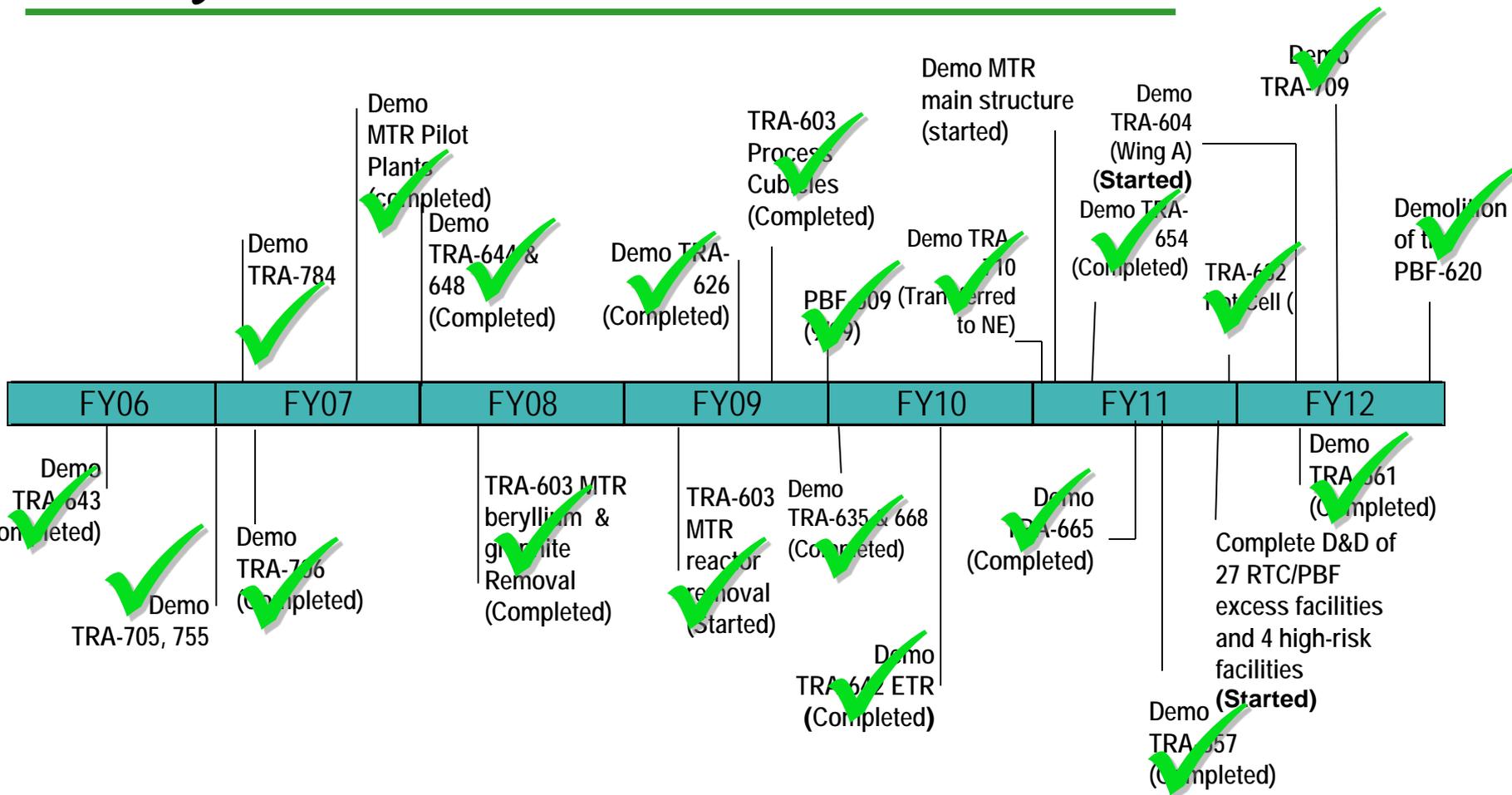
- Demolish 16 excess facilities
 - 1 Stretch goal included (Completed in September FY10)
- Demolish 2 high risk facilities
 - MTR Reactor
 - TRA Hot Cells



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D&D – Advanced Test Reactor Complex/Power Burst Facility D&D



- 24 of 27 excess facilities and two high-risk facilities completed to date



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ARRA D&D - Advanced Test Reactor Complex Project

Accomplishments Since September

- Completed diamond-wire sawing and demolition of TRA-604 Count Room
- Dislodged, picked and placed the MTR reactor on the main floor in preparation for shipment to ICDF. (Received verbal DEQ approval allowing shipment of the reactor to ICDF without removal of the internal lead-shot (Pb))
- Completed excavation, removal, transport, and backfill of the TRA-713 B,C,D hot waste tanks
- Completed the TRA-730 catch tanks/vaults demolition (stretch goal).
- Completed TRA-632 Hot Cell #3 (HC3) Low-Level waste box filling, grouting, and disposition.



TRA-730 vault demolition (stretch goal)



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ARRA D&D - Advanced Test Reactor Complex Project

Accomplishments Since September (cont.)

- Completed TRA-632 Hot Cell #1 manipulator removal activities
- Completed preparations and grouting of TRA-632 Hot Cell #1

Upcoming Activities

- Complete MTR reactor vessel transport to ICDF
- Complete waste removal from under the tables within TRA-632 HC3
- Initiate TRA-632 exterior demolition
- Complete TRA-632 Hot Cell drain line removal activities (outside the footprint of the cells)



TRA-713 excavation & tank removals



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ARRA D&D – INTEC Project Objectives

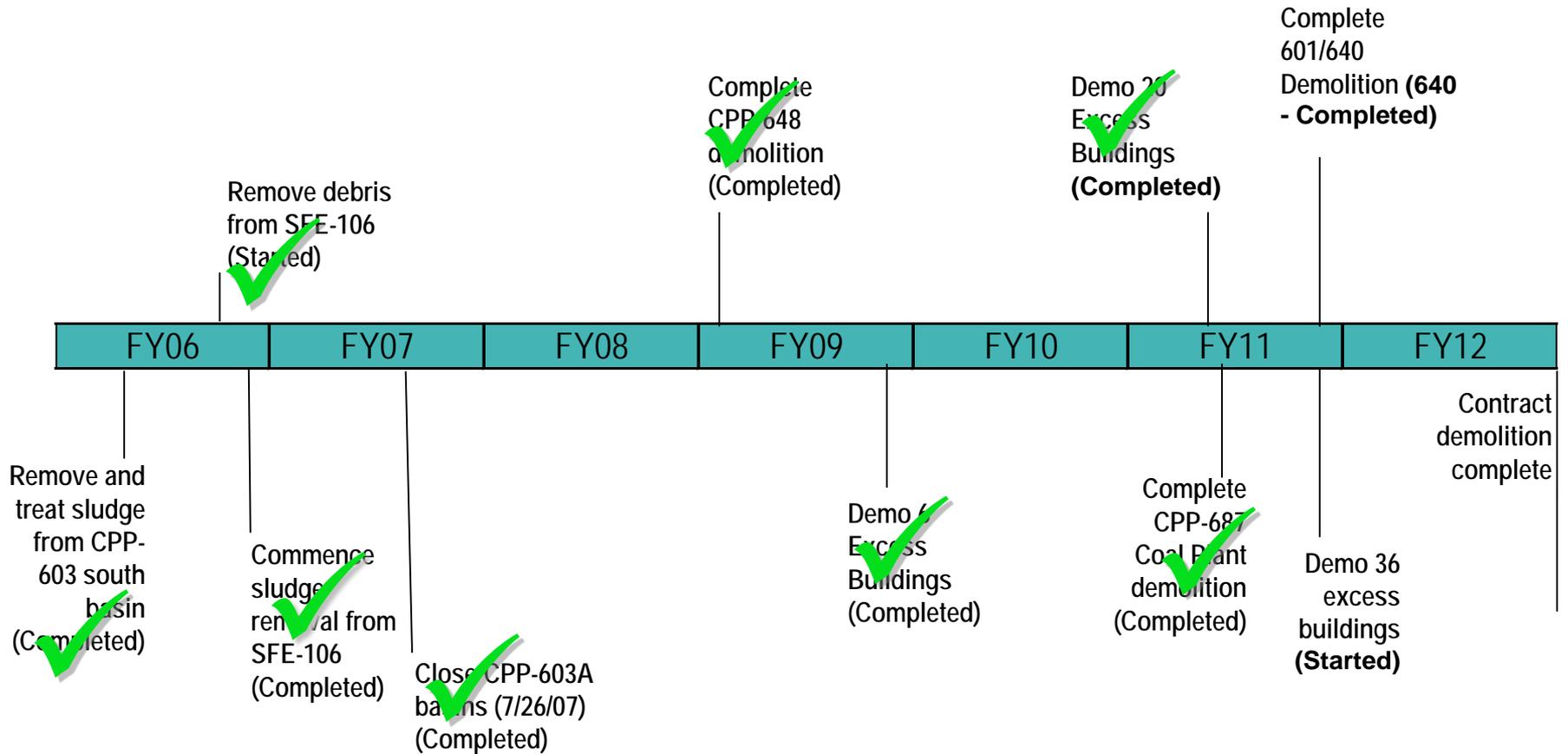
- Demolish 60 excess facilities
 - 1 Stretch goal included (Completed in September FY10)
- Demolish 2 high-risk facilities:
 - CPP-601 (Fuel Processing Facility)
 - CPP-640 (Head End Fuel Processing Facility) - Completed



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D&D – INTEC Project



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ARRA D&D – INTEC Project

Accomplishments Since September

- Completed CPP-694 demolition (Stretch goal)
- Completed CPP-1649 demolition
- Completed CPP-1794 demolition
- Completed Fuel Reprocessing Building CPP-601 main-structure demolition
- Continued CPP-601 monolith weather-protective cover preparations
- Completed APS duct-bank demolition
- Continued CPP-602 interior demolition, mechanical/electrical isolations and waste removal

Upcoming Activities

- Complete demolition of the Fuel Reprocessing Building (CPP-601)
- Complete CPP-1638 demolition
- Continue CPP-602 D&D

CPP-601 APS duct-bank demolition



CPP-601 East-side monolith preparation



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ARRA D&D – Materials and Fuels Complex (MFC) Project Objections

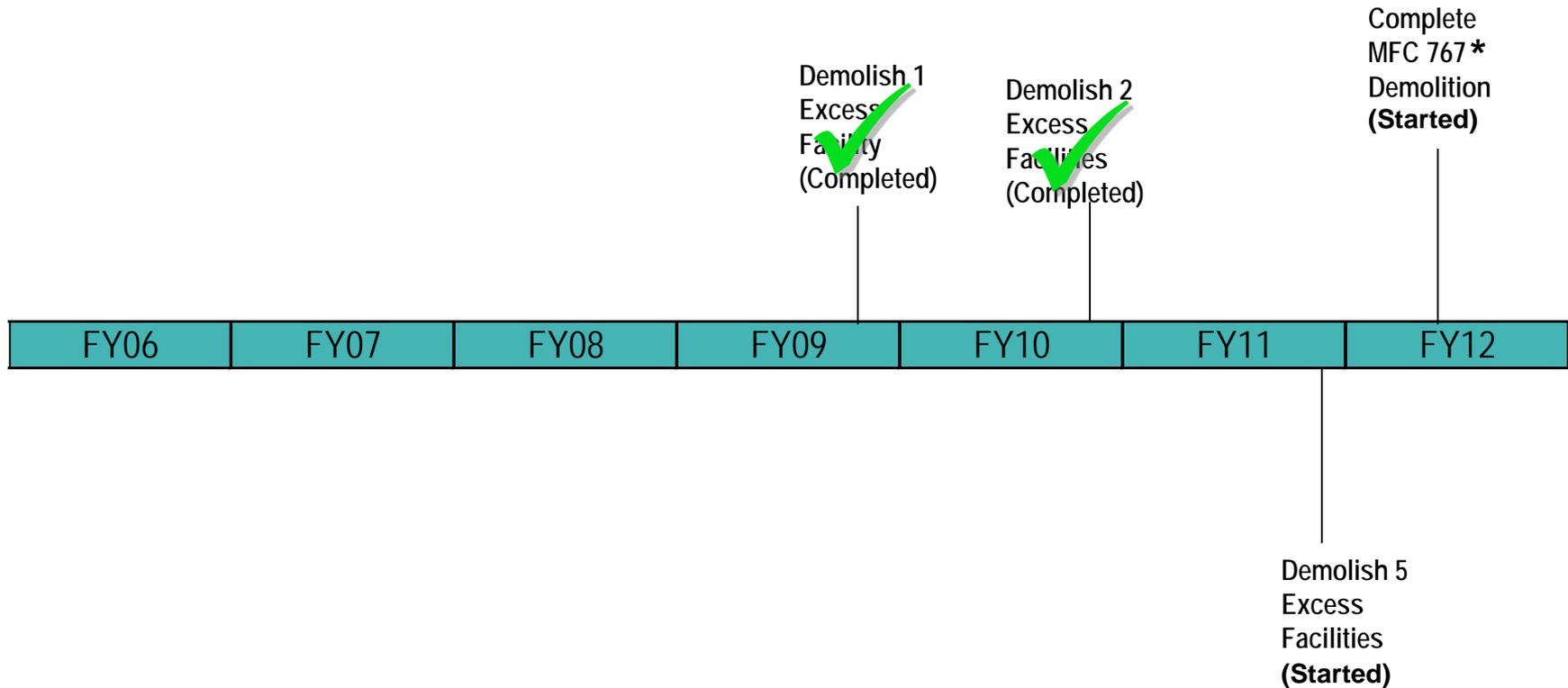
- Demolish 8 excess facilities
 - (4) Stretch goals included
- Demolish 1 high risk facility
 - EBR-II Reactor



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ARRA D&D – Materials and Fuels Complex (MFC) Project



* MFC 767 (EBR II) demolition shifted to 2012 due to sodium processing and asbestos abatement concerns



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ARRA D&D – Materials and Fuels Complex (MFC)

Accomplishments Since September

- Completed the MFC-793A Alcohol Recovery Facility hazardous waste removal
- Finalized EBR-II Historical Preservation approval actions
- Completed asbestos in MFC-766 east above grade
- Commenced removal and processing of EBR II primary tank components
- Complete deactivation of the Covered Gas Collection System

Upcoming Activities

- Complete preparations for passivated sodium treatment in the MFC-766/767 transfer lines
- Complete preparations for treatment of EBR II Primary Coolant Pumps, Intermediate Heat Exchanger, and Shutdown Coolers
- Complete removal of sodium components.



MFC-793A hazardous waste removal



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Integrated Waste Treatment Unit (Sodium-Bearing Waste) Project Objectives

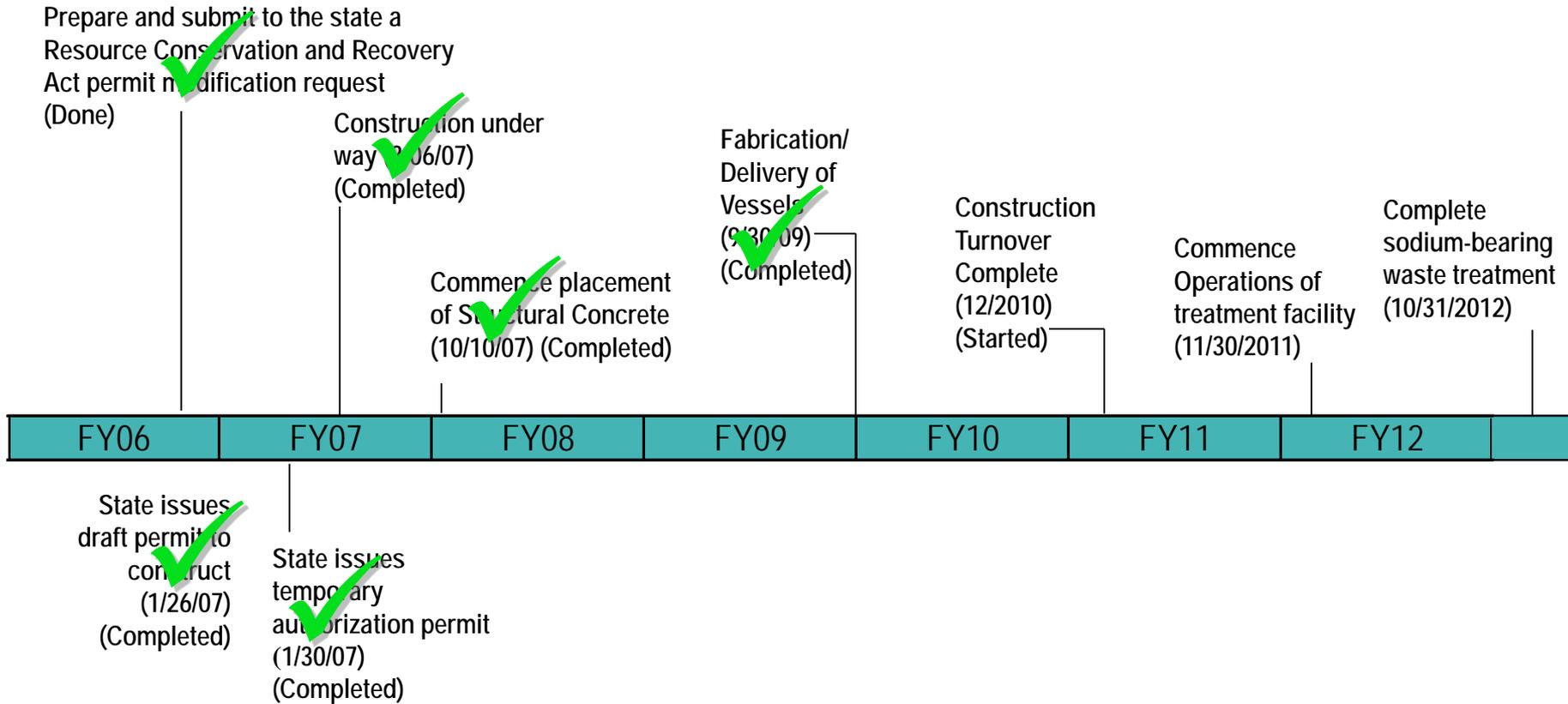
- Design, construct, test and operate the Sodium Bearing Waste Treatment Facility
- Process all sodium-bearing waste material no later than December 31, 2012



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Integrated Waste Treatment Unit (Sodium-Bearing Waste) Project



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Integrated Waste Treatment Unit (Sodium-Bearing Waste) Project

Accomplishments Since September

- Construction completed on 31 of 33 systems needed for integrated plant testing
- Physical completion: 90%
- Project completion: 92%

Upcoming Activities

- Complete remaining construction items
- Systems testing



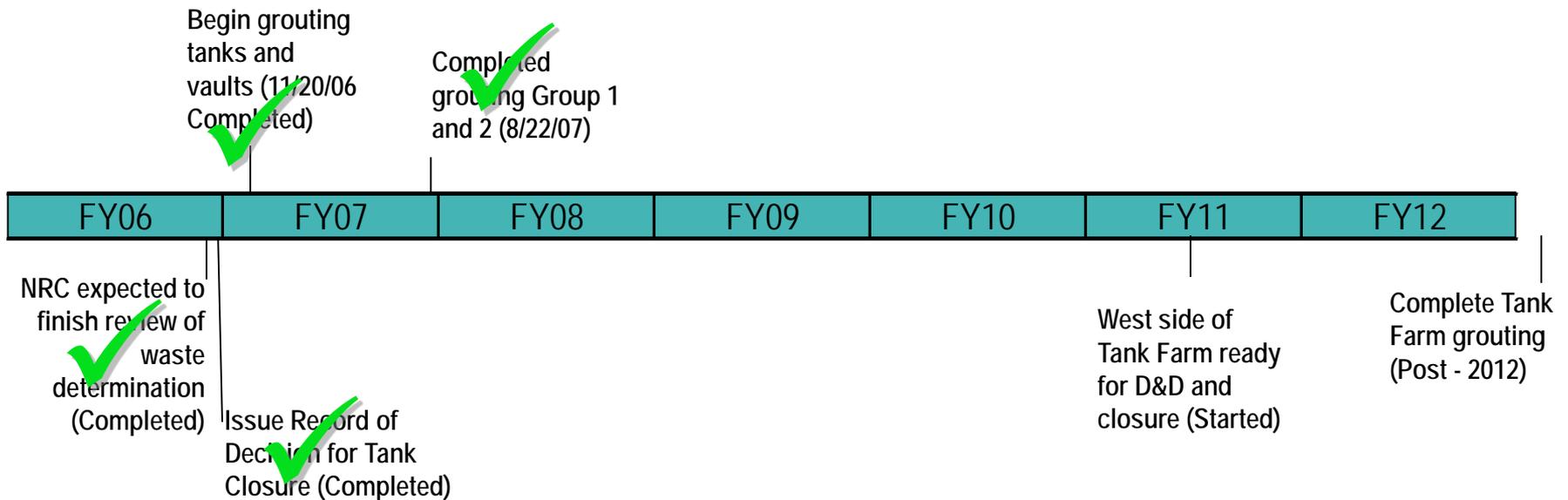
Vessels in the IWTU



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INTEC Liquid Waste Facility (Tank Farm) Closure Project



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Spent Nuclear Fuel Disposition Project Objectives

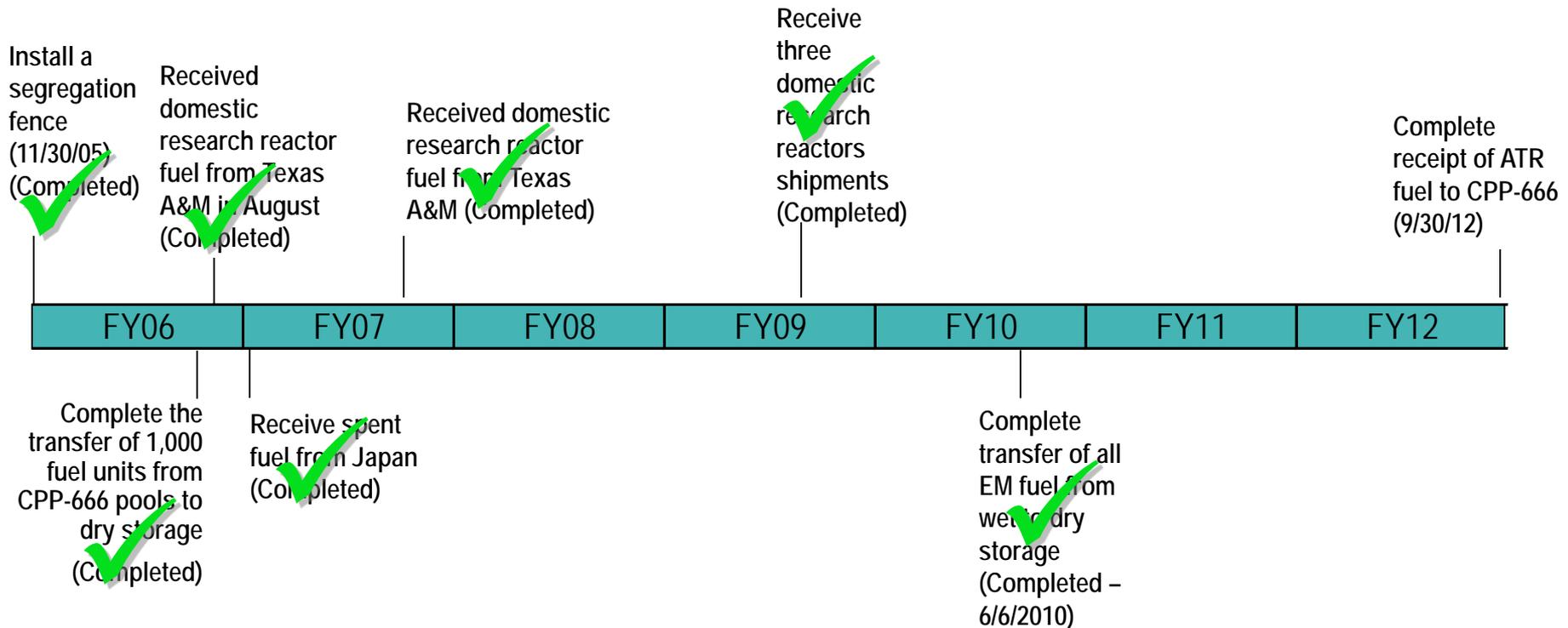
- Transfer legacy, EM-owned spent nuclear fuel (SNF) from wet storage to appropriate dry storage (completed)
- Receive and store SNF from the Advanced Test Reactor
- Receive Domestic and Foreign Research Reactor SNF for storage
- Prepare the SNM facilities for transition to another government entity by installing a segregation fence (completed)
- Provide safe, regulatory-compliant, routine operations for INTEC SNF handling and storage facilities



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Spent Nuclear Fuel Disposition Project



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Spent Nuclear Fuel Disposition Project

Accomplishments Since September

- **One Domestic Reactor Receipt (DRR) at INTEC in December – Neutron Radiography Reactor Fuel (NRAD) fuel from Materials and Fuels Complex)**



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Calcine Disposition Project Objectives

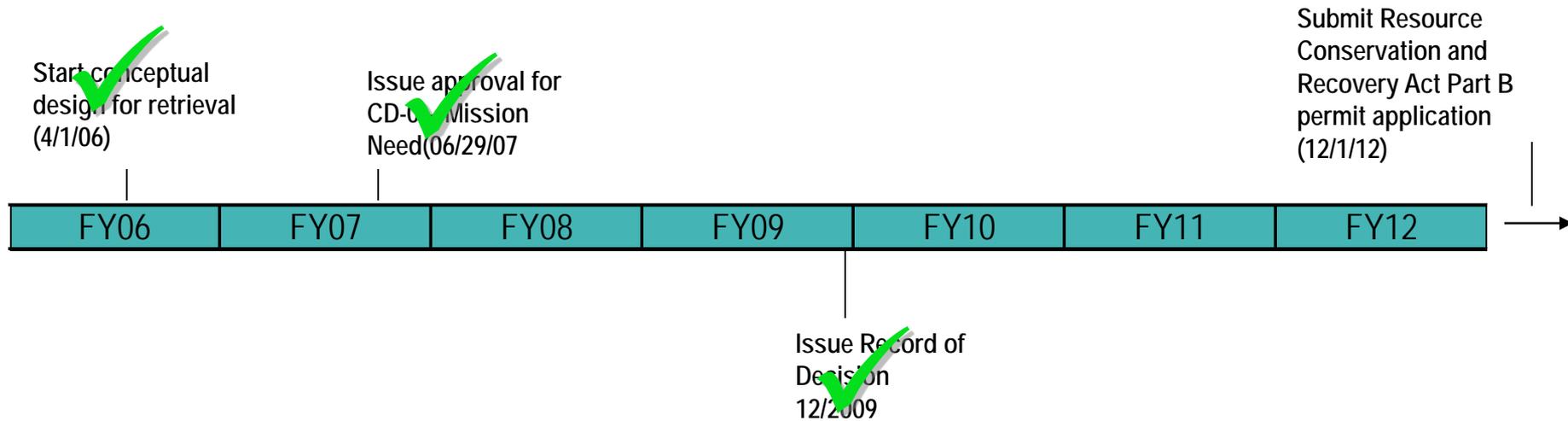
- Meet the requirements of the Idaho Settlement Agreement:
 - Issue a Record of Decision regarding the treatment of calcine by December 31, 2009 (Completed)
 - Submit an application for a RCRA Part B Permit governing the treatment and in-state disposition of calcine (transport and interim storage, if necessary)
 - Render calcine in a "road-ready" form (ready to be shipped out of State) by a "target" date of December 31, 2035
- Meet the requirements of the Idaho Site Treatment Plan for the safe management of calcine as a mixed hazardous waste under the Resource Conservation and Recovery Act per permits and agreed upon milestones



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Calcine Disposition Project



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Calcine Disposition Project

Accomplishments Since September

- CD-1 approval has been deferred until FY 2012 or 2013

Upcoming Activities

- Continue engineering evaluations and design in support of the RCRA Part B Permit Modification
- Initiate technology assessments in support of the RCRA Part B Permit Modification



Graphic depicting the interior of a calcine bin set



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ARRA Performance Measures

Metrics Through: December 2010

PBS	Performance Metric	Unit	Life-Cycle Target	Prior Year Actuals	Current Year Totals	Cum Actual	CY Total Targets	Cum Target	Percentage Actual vs. Cum Target
ID-0013.R1	LLW Disposed	meters 3	650	2,096	-	2,096	-	2,000	105%
ID-0013.R1	MLLW Disposed	meters 3	1,095	1,231	-	1,231	-	1,195	103%
ID-0013.NEW.R1 TRU Waste	D&D Debris Disposed	meters 3	24,643	15,293	7,994	23,287	2,700	16,526	141%
ID-0013.NEW.R1 TRU Waste	RH-TRU Certification Ready	meters 3	22.60	16.43	3.00	19	0	7.90	246%
ID-0030B.R1.2	Holes Grouted	holes	2,168	2,168	-	2,168	328	2,168.00	100%
ID-0030B.R1.3 Soil and Ground Water Operations	Buried Waste Exhumed	acres	0.71	0.77	0.23	1.00	0.08	0.50	200%



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ARRA Performance Measures Con't

PBS	Performance Metric	Unit	Life-Cycle Target	Previous Year Actuals	Current Year Totals	Cum Actual	CY Total Targets	Cum Target	Percentage Actual vs. Cum Target
ID-0040B.R1.1 - Nuclear Facility Completions	Nuclear Facilities Demolished	count	11	11	-	11	-	10.0	110%
ID-0040B.R1.1 - Radioactive Facility Completions	Radioactive Facilities Demolished	count	16	15	-	15	-	14.0	107%
ID-0040B.R1.1 - Industrial Facility Completions	Industrial Facilities Demolished	count	12	6	1	7	1	7.0	100%
ID-0040B.R1.1 - Facility Square Footage Demolished	Gross Square Footage Demolished	gross square footage	258,222	141,914	2,476	144,390	10,773	152,703	95%
ID-0040B.R1.2 - Nuclear Facility Completions	Nuclear Facilities Demolished	count	5	3	-	3	-	2.0	150%
ID-0040B.R1.2 - Radioactive Facility Completions	Radioactive Facilities Demolished	count	7	6	-	6	-	5.0	120%
ID-0040B.R1.2 - Industrial Facility Completions	Industrial Facilities Demolished	count	20	16	1	17	-	17.0	100%
ID-0040B.R1.2 - Square Footage Demolished	Gross Square Footage Demolished	gross square footage	466,430	276,668	22,500	299,168	-	255,627	117%



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ARRA Performance Measures Con't

Metrics Through: December 2010

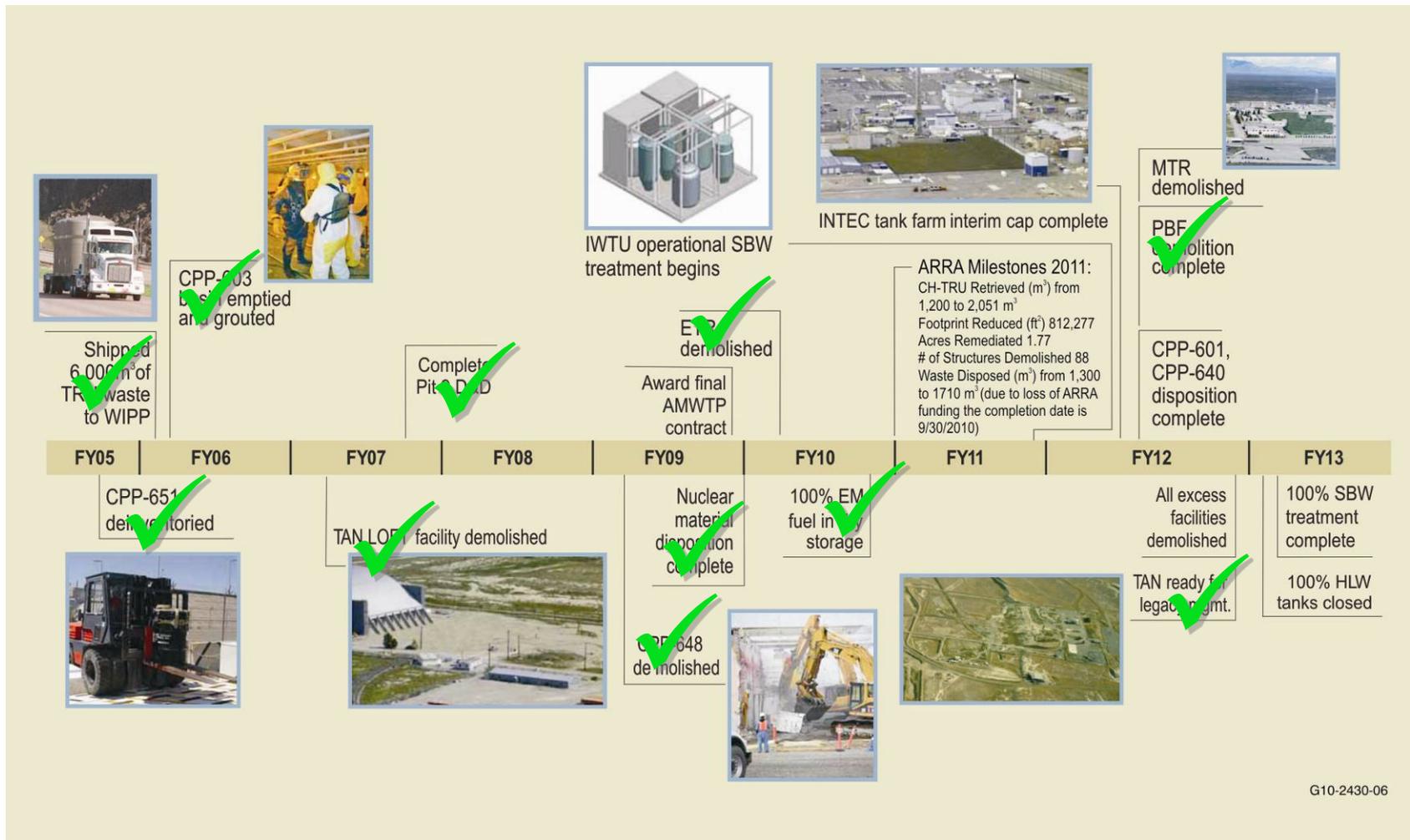
PBS	Performance Metric	Unit	Life-Cycle Target	Previous Year Actual	Current Year Totals	Cum Actual	CY Total Targets	Cum Target	Percentage Actual vs. Cum Target
ID-0040B.NEW.R1.3 - Nuclear Facility Completions	Nuclear Facilities Demolished	count	13	5	-	5	-	5.0	100%
ID-0040B.NEW.R1.3 - Radioactive Facility Completions	Radioactive Facilities Demolished	count	5	2	-	2	-	3.0	67%
ID-0040B.NEW.R1.3 - Industrial Facility Completions	Industrial Facilities Demolished	count	1	1	-	1	-	1.0	100%
ID-0040B.NEW.R1.3 - Square Footage Demolished	Gross Square Footage Demolished	gross square footage	87,625	20,987	-	20,987	1,000	21,987.0	95%



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Key Activities/Completion Dates



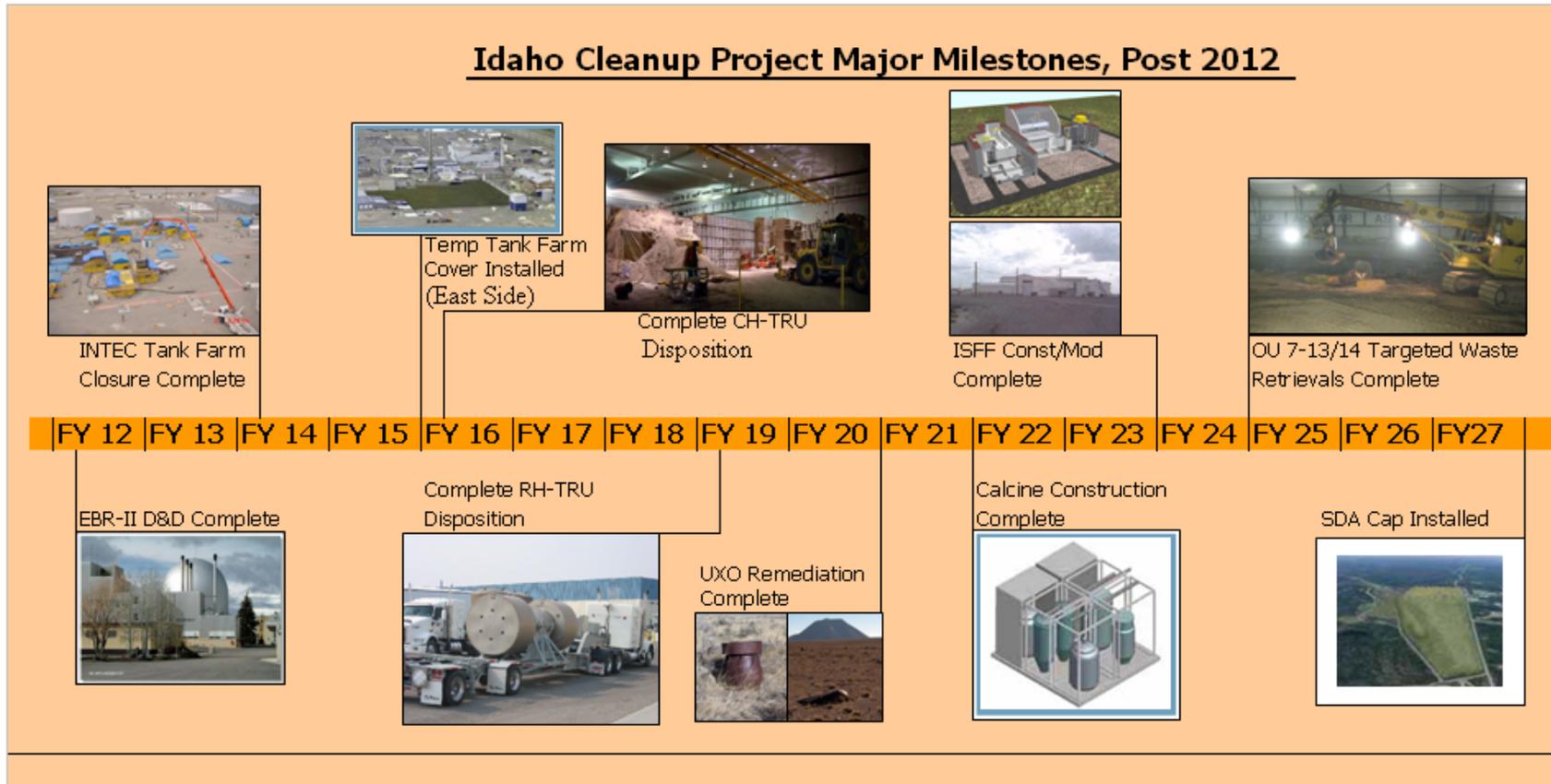
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Idaho Project Milestones – Post 2012



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Items of Potential Interest

- CAB support in the ICP Acceleration
- Idaho EM Budget Request \$412 M
- Projected Resource Impacts Associated with ARRA Work Scope Completions



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