Hunters Point Naval Shipyard

Radiological Data Retesting Update

HPS CAC Environmental & Reuse Subcommittee Meeting

November 7, 2018

Derek J. Robinson, P.E.
Navy Base Realignment and Closure (BRAC)
BRAC Environmental Coordinator

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Presentation Overview

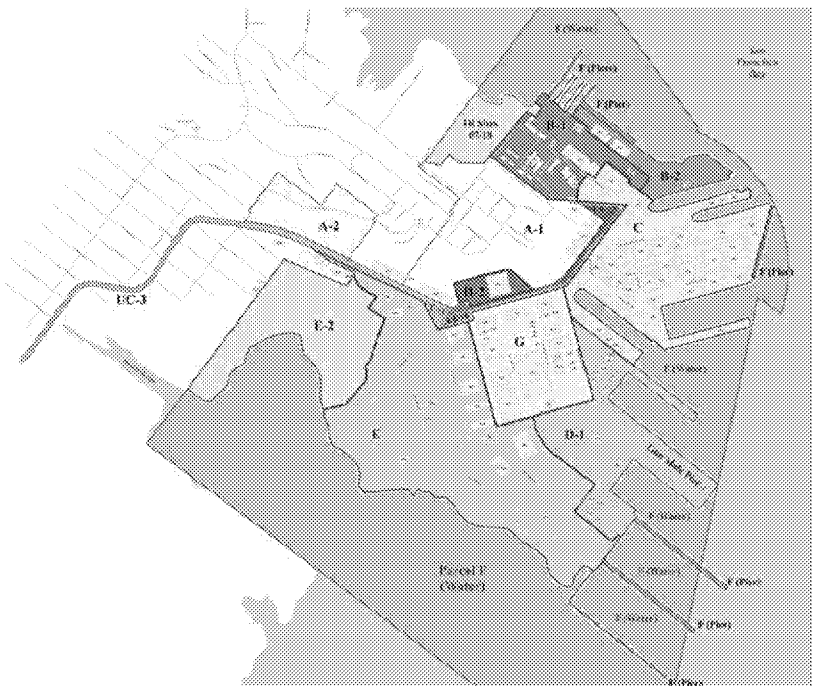
Radiological Contamination at HPNS

- Why? Where? What?

Radiological Cleanup at HPNS Today

- CERCLA cleanup and radiological retesting
- Retesting of areas evaluated by Tetra Tech EC (TtEC)
- Parcel A Scans

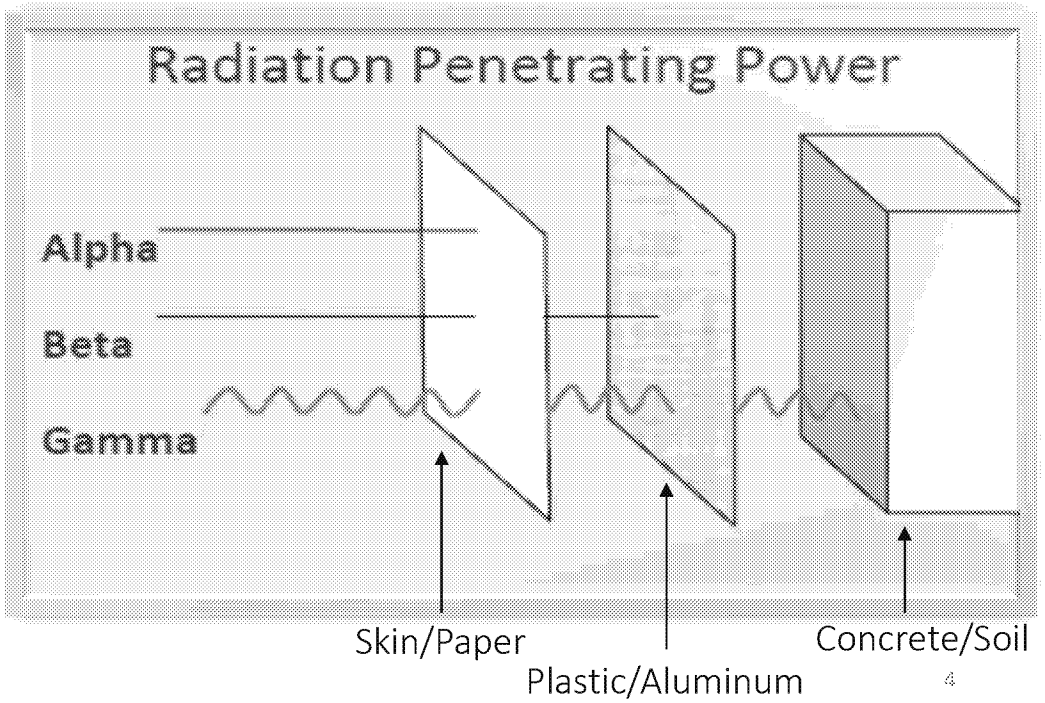
Protecting the Public



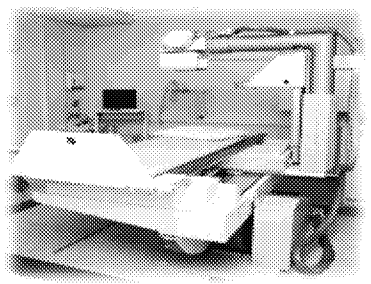
Radiological Contamination at HPNS
WHAT is radiation?

Radiation is energy that comes from a source, travels through space, and may be able to penetrate various materials

- What are the different types of radiation?
  - Light waves
  - Radio waves
  - X-rays
  - Microwaves
  - Particles and energy rays emitted from an atom

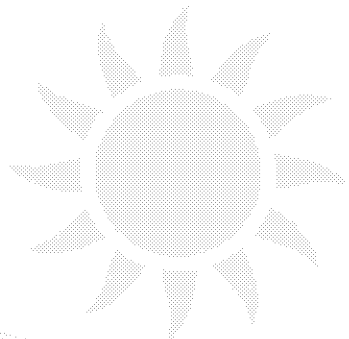


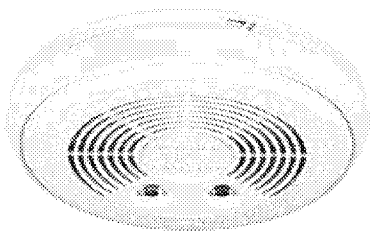
Radiological Contamination at HPNS
How are we exposed to radiation?

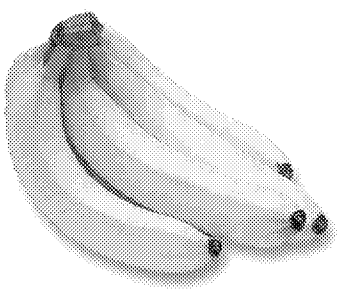


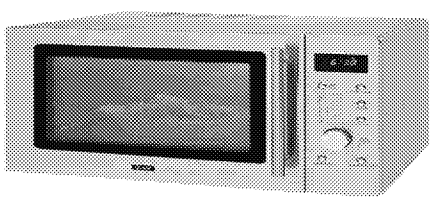
Radiation is all around us!!

- Natural radiation sources – some common foods, air, water, soil, and the sun
- Radiation occurs in some man-made
- sources – TV, smoke-detector, X-rays









Radiological Contamination at HPNS
WHY is there radiological contamination at HPNS?

Historical Shipyard Activities

- Ship repair and maintenance
- Operation Crossroads
- Navy Radiological Defense Laboratory (NRDL)
- Storage of radioactive materials
- Disposal of paint in drains

Radiological Contamination at HPNS
HOW do we clean up radiation?

2004 Historical Radiological Assessment identifies areas to be investigated

- Thousands of historical records researched
- Over 170 interviews with former workers
- Regulatory agency review and input
- Focus on –
  - Review of the types of radiological materials used
  - Review of locations where radioactive materials were used or stored
  - Review of sites of known spills, discharges, or other releases that may have occurred
  - Review of sites where radioactive materials may have been disposed or buried
  - Review of potential ways that contamination may have been spread

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Radiological Contamination at HPNS
HOW do we determine what CLEAN is?

1. Regulations, laws, and guidance dictate safe levels of radiation.
2. Regulatory agency tools are used to calculate remedial goals for a particular site.
3. The Navy incorporates site specific goals into our remedial actions, usually memorialized in the Record of Decision document for each site.

Radiological Contamination at HPNS
HOW do we determine what CLEAN is?

Two processes are on-going:

1. Retest areas previously evaluated by TtEC to ensure radiological cleanup criteria met
   - *Retesting of parcels to begin with Parcel G.*
   - *The draft final work plan for Parcel G has been submitted and fieldwork is expected to begin in 2018!*
2. Perform 5-Year Review to evaluate protectiveness of past remedial actions.
   - *Using current risk assessment procedures and guidance, the Navy evaluated past remedial action levels and will present Navy draft calculations in the 2018 5-year Review that will demonstrate protectiveness.*

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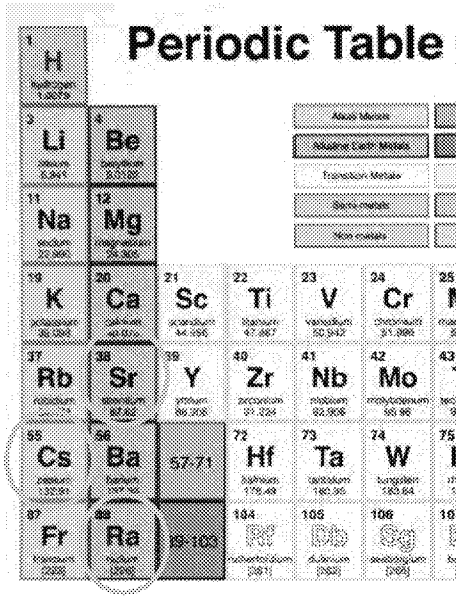
Radiological Contamination at HPNS
WHAT radiological elements are present at HPNS?

Radium

- Present in background
- Used to cause items to glow in the dark
- Accounts for a majority of radiological contamination at HPNS



Strontium and Cesium

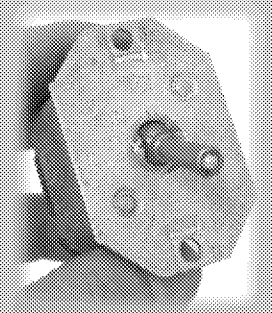
- From decontamination of ships used in weapons tests
- Used in NRDL research
- Used in radioluminescent deck markers (strontium)

Radiological Contamination at HPNS
WHAT are the sources of radiological contamination?

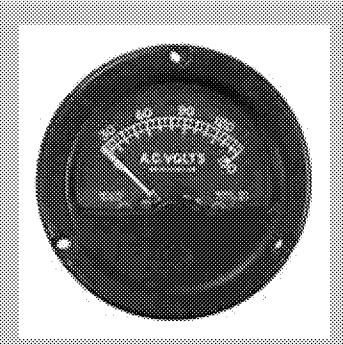
Radiological contamination a result of historical shipyard activities

- Ship-board items
- Radioluminescent paint
- Sandblast grit
- Fire bricks

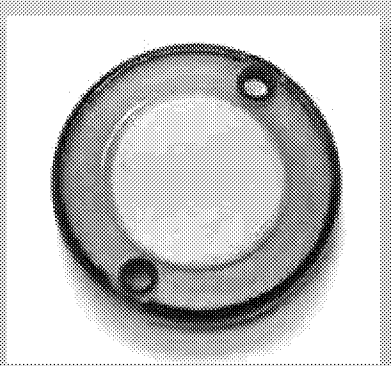
Examples of historical radioluminescent (glow-in-the-dark) ship-board items



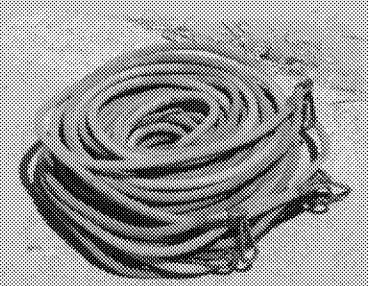
Switch



Volt Meter



Deck Marker



Safety Rope

Radiological Contamination at HPNS
WHERE is the radiological contamination and HOW is the Navy addressing it?

Historical Radiological Assessment (HRA) – 2004

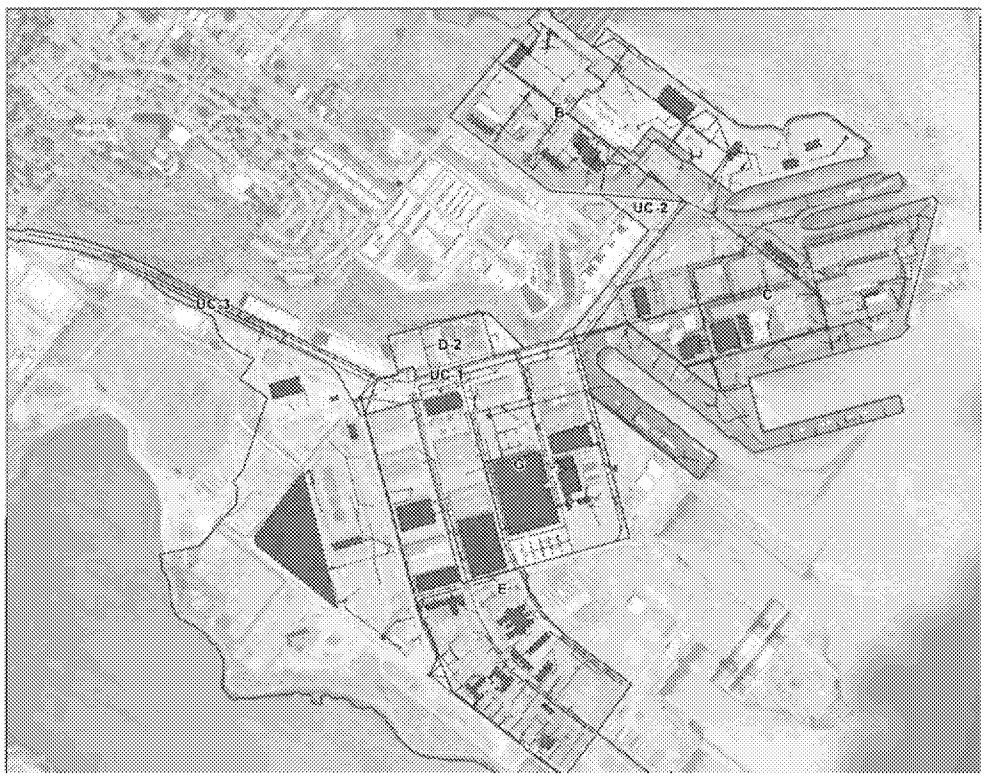
- Evaluated historical operations
- Interviewed former sailors and employees
- Identified over 90 sites/areas that may have radiological contamination
  - Buildings associated with NRDL activities or radium paint application
  - Sanitary sewer and storm drain lines
  - Former disposal or burial areas
  - Piers or ship berths used after Operation Crossroads

	Final Remedy per Parcel Record of Decision			
Parcel	Buildings and Soil Areas Remediation	Piers and Ship Berths Remediation	Storm and Sewer Line Removal	Contain in Place
B	X	X	X	N/A
C	X	X	X	N/A
D-1	X	X	X	N/A
D-2	X	N/A	X	N/A
E	X	N/A	X	X
E-2	X	N/A	X	X
F	N/A	X	N/A	N/A
G	X	N/A	X	N/A
UC's	N/A	N/A	X	N/A

Radiological contamination remedies at HPNS shown in green blocks

Radiological Cleanup at HPNS Today
WHERE is the Navy evaluating radiological contamination?

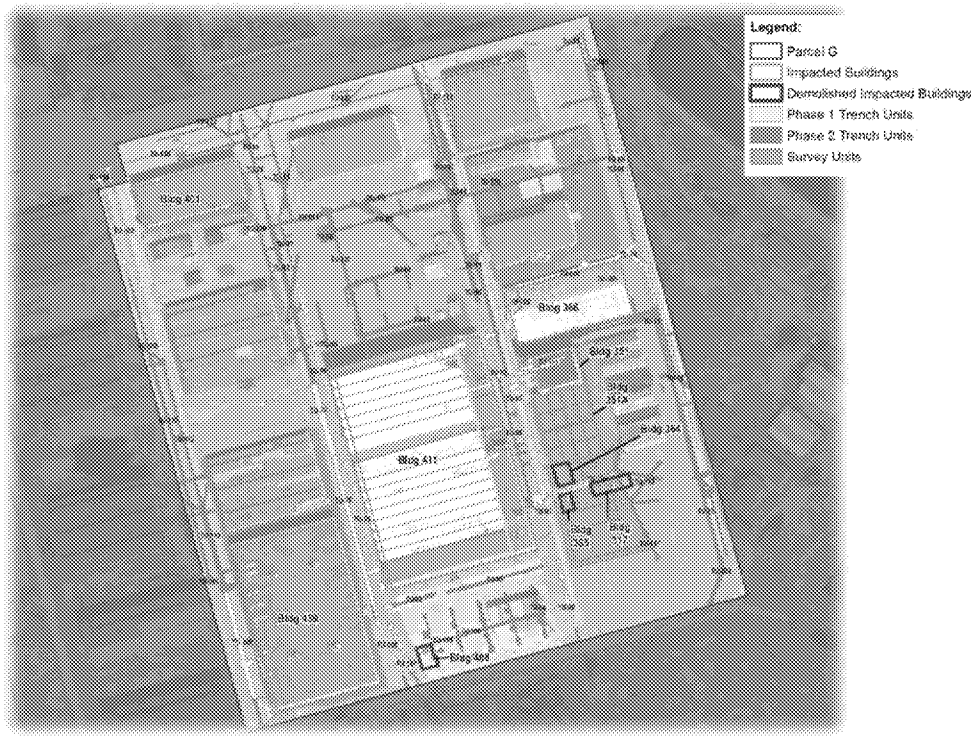
- Navy continues CERCLA cleanup of radiological contaminants according to each parcel's Record of Decision (ROD)
- Navy retesting areas previously evaluated by TtEC to ensure radiological cleanup criteria met
- CDPH conducting radiological surface scans of Parcel A to verify public safety



Blue represents areas being re-tested

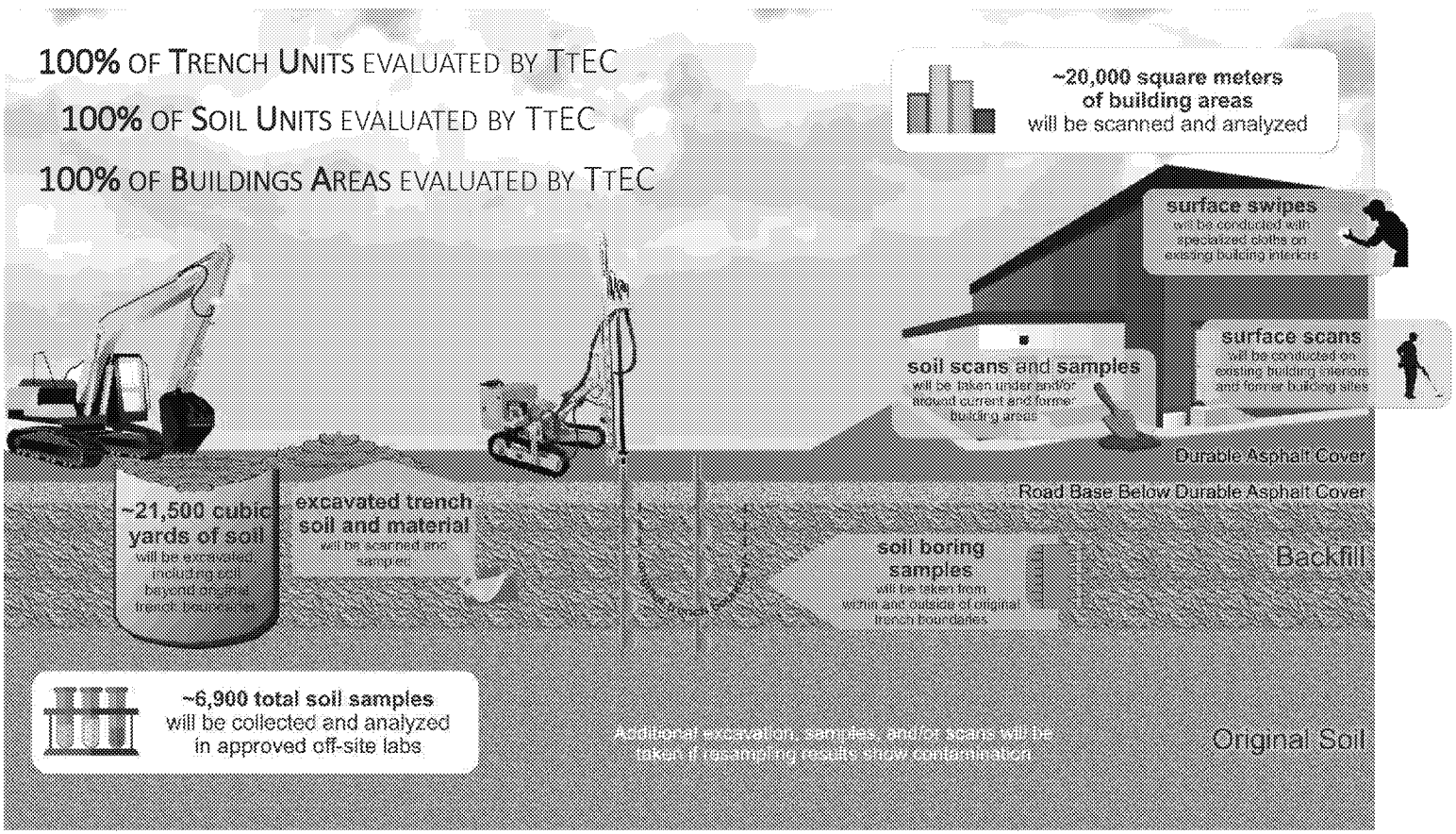
Radiological Cleanup at HPNS Today
WHAT is the status of radiological retesting at HPNS?

- Navy to take new samples and scans at areas previously evaluated by TtEC
  - Trenches
  - Current and former building areas
  - Existing building interiors
- Navy to conduct surface scans of Parcels G, D-2, UC-1, and UC-2
  - After radiological retesting complete
- Parcel G work to begin in late 2018/early 2019



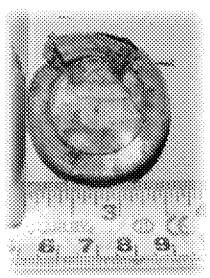
Map of areas at Parcel G that will undergo radiological retesting

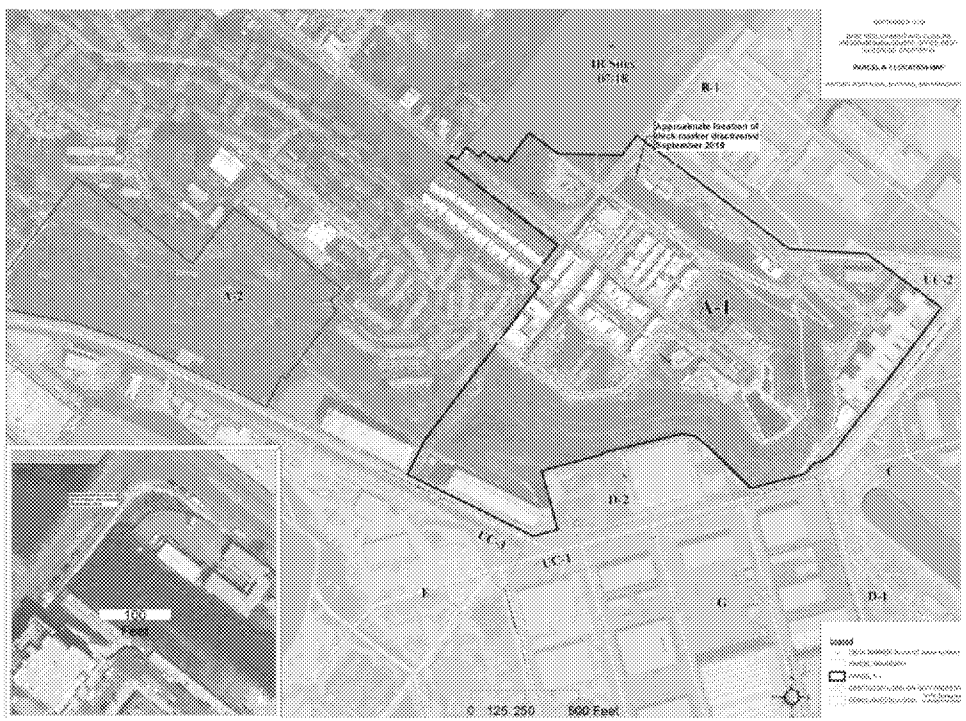
Radiological Cleanup at HPNS Today
WHAT will the Navy retest at Parcel G?



Radiological Cleanup at HPNS Today
WHAT is the status of surface scans at Parcel A?

- CDPH Parcel A-1 surface scans were completed in October 2018
  - Anomalous readings: mostly naturally occurring elements in landscaping materials
    - wood chips and fertilizer
  - 1 anomalous reading: historical low-level deck marker
    - Removed and evaluated by Navy
    - No health risk to community
- Parcel A-2 scans underway





Deck marker site discovery location (location detail in inset)
1.5" item found 10" below surface in undeveloped area behind a fence

Protecting the Public
Is the community SAFE?

NAVFAC

PARCEL A -

- ✓ No historical radiological shipyard use = EPA confirms no radiological risk to community
- ✓ Numerous radiological scans prior to property transfer = EPA confirms property is safe for redevelopment
- ✓ CDPH radiological surface scans (2018) = CDPH confirms property is safe for residential use
- ✓ Deck marker at Parcel A-1 = EPA and CDPH confirm no radiological risk to community

OTHER PARCELS-

- ✓ Radiological Retesting of areas evaluated by TtEC
- ✓ Third party oversight will ensure validity of data during CERCLA cleanup and radiological retesting
- ✓ Additional remediation wherever radiological retesting indicates the need
- ✓ Radiological surface scans of Parcels G, D-2, UC-1, and UC-2 planned after radiological retesting complete

Protecting the Public
WHO is overseeing cleanup and radiological retesting at HPNS?

HPNS BRAC Cleanup Team

- Navy BRAC – manages cleanup at HPNS
- US EPA – lead regulatory agency; ensures compliance to federal requirements
- DTSC – lead state agency; ensures cleanup meets state laws and regulations
- Water Board – ensures safety of Bay Area waters

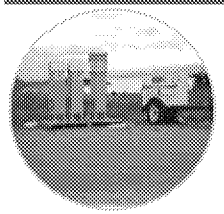
Regulatory Agency Oversight

- During basewide cleanup
- During radiological retesting
- Throughout transfer process

Additional oversight and review during radiological retesting

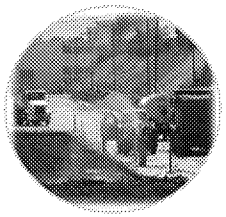
- Third-party oversight to ensure integrity of data collection, document processes, verify results
- Review of procedures and results by independent experts
- Confirmation samples gathered by regulatory agencies to confirm Navy results

Protecting the Public
HOW is the Navy ensuring the safety of the public during cleanup?



Air Monitoring

- The Navy monitors for both particulates and radiological contamination with on-site air monitors
- Independent confirmation samples are taken to confirm accuracy of Navy results

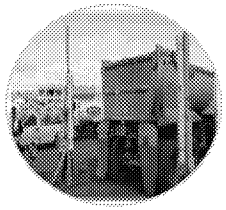


Dust Control Measures

- Dust is controlled to contain contamination within the restricted areas
- Air monitoring ensures dust from HPNS does not affect the surrounding community
- Work stoppage when wind speed is over 25 mph

Radiologically Controlled Areas

- Public access to all work areas is restricted and only specially trained personnel are permitted to access radiological controlled work areas



Portal Monitor to Screen Trucks for Radiation

- Trucks entering and leaving HPNS must pass through a portal monitor which screens for radiation

Protecting the Public
Radiation in perspective

Exposure to dust: LOW

- Navy dust control measures limit exposure to the community

Exposure to radiological contaminants: LOW

- Radiologically controlled areas limit access by the public

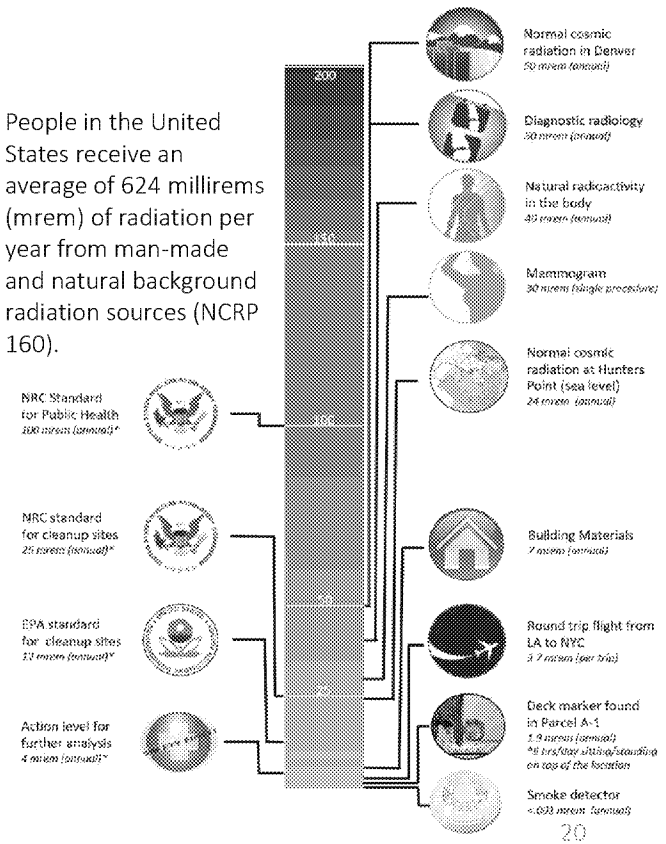
Exposure to radiological waste: LOW

- Historical disposal in Shipyard landfill on Parcel E-2
  - ➢ protective cover and land use controls
- Radiological waste during cleanup placed in specialized bins
  - ➢ disposed of off-site at approved facilities

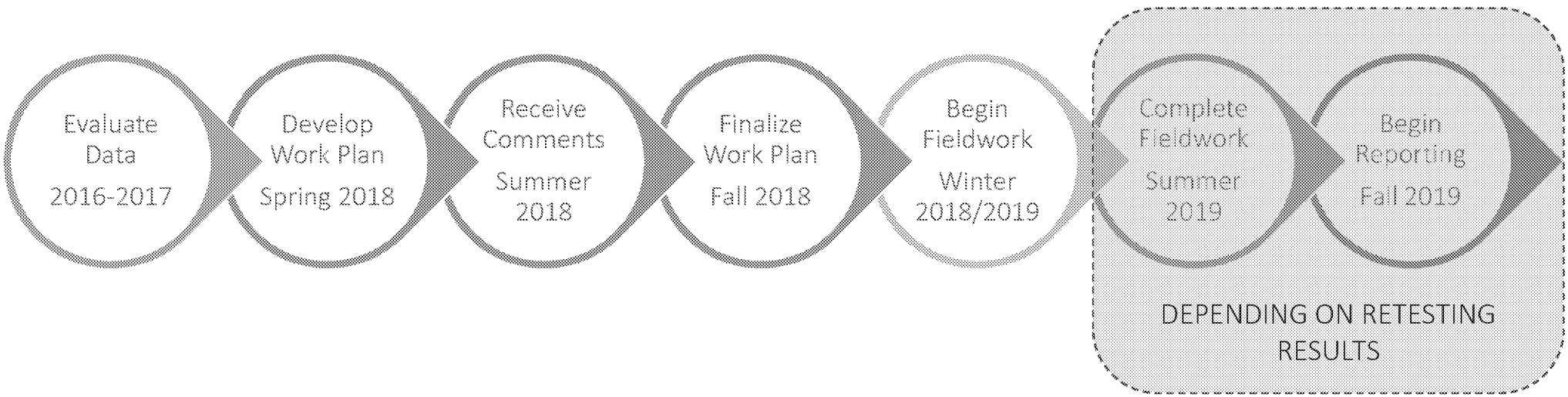
Exposure to radiological contamination from deck marker at Parcel A-1: LOW

- 1.9 mrem (annual) if a person were to sit or stand on the location for 8 hours per day for a year

People in the United States receive an average of 624 millirems (mrem) of radiation per year from man-made and natural background radiation sources (NCRP 160).



Parcel G Retesting Schedule



Learn More

Access Navy Resources For More Information

Contact HPNS program management

Derek J. Robinson
Navy BRAC PMO West
33000 Nixie Way, Bldg 50
San Diego, CA 92147
Phone: (619) 524-6026
Fax: (619) 524-5260
derek.j.robinson1@navy.mil

Attend a bus tour or Navy community meeting

Look for 2019 Bus Tour and Navy meeting announcements by email and on the Navy's website

Visit the Navy's website

Navy Website
HPNS Main Web Page
www.bracpmo.navy.mil/hpns

HPNS Radiological Program Web Page
www.bracpmo.navy.mil/hpnsrc

Join the HPNS mailing list or leave a comment

Send an email to
info@sfhpns.com

Leave a message on the HPNS Information Line
(415) 295-4742

Review a Navy report

City of San Francisco Main Library
100 Larkin Street, 5th Floor
Government Information Center
San Francisco, CA 94102
(415) 557-4400

Shipyard Site Trailer
(near HPNS security entrance)
690 Hudson Avenue
San Francisco, CA 94124

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Get Radiological Health and Safety Questions Answered

Get Answers

Contact the Community Technical Liaison

Dr. Kathryn Higley
(541) 737-7063
kathryn.higley@oregonstate.edu
www.ne.oregonstate.edu/kathryn-higley

- Internationally-recognized expert in radiological health and safety
- Head of the School of Nuclear Science and Engineering at Oregon State University
- Highly qualified independent resource available to the public on HPNS radiological issues
- Available to answer community member questions by phone or email, during local onsite hours, or by appointment

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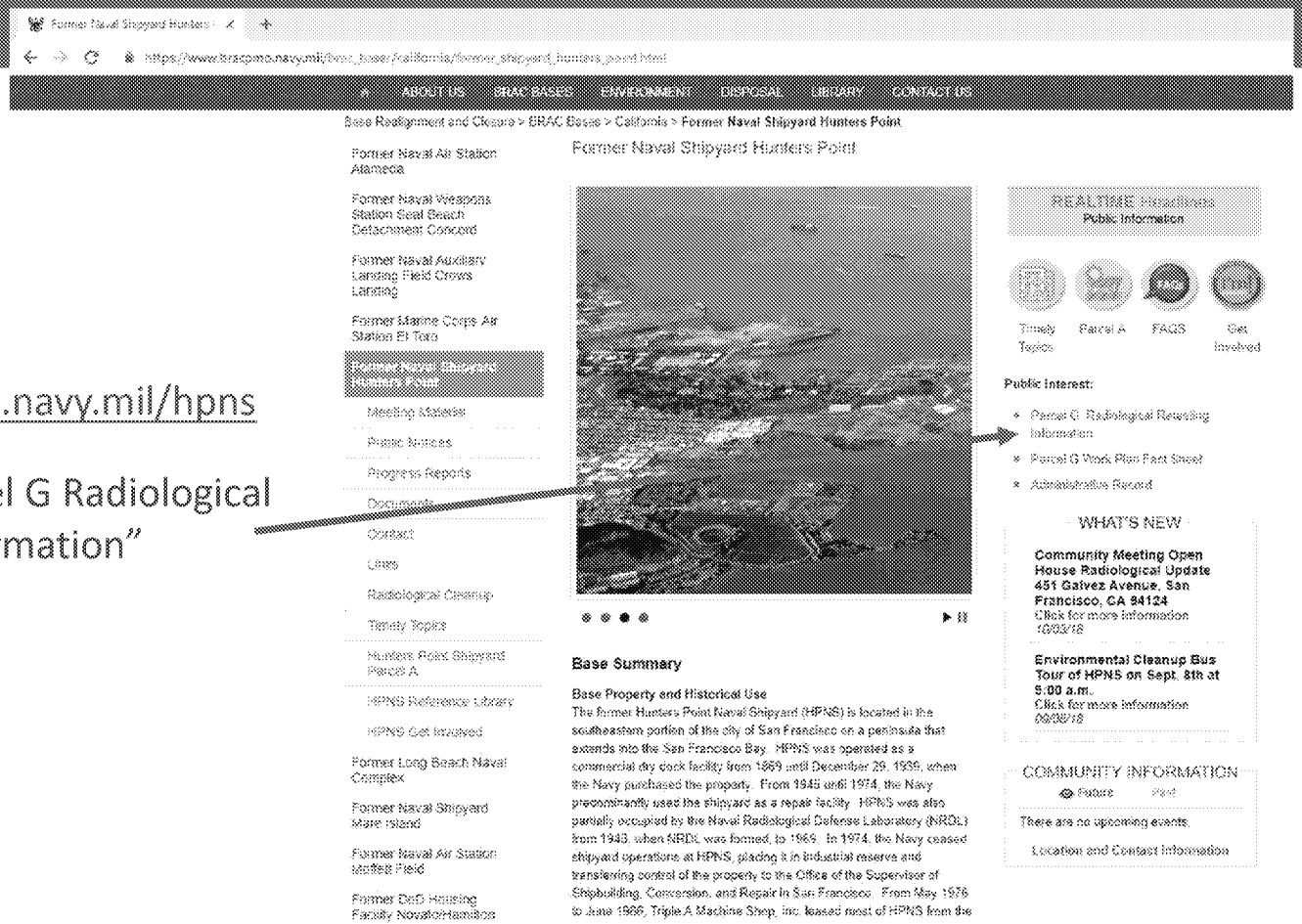
For More Information on Retesting at Parcel G

1. Go to: www.bracpmo.navy.mil/hpns
2. Click on "Parcel G Radiological Retesting Information"