Orlando, Dominick

From: Kautsky, Mark <Mark.Kautsky@lm.doe.gov>
Sent: Monday, April 29, 2019 2:57 PM
To: Orlando, Dominick
Cc: joni Tallbull (jtallbull@navajo-nsn.gov); Madeline Roanhorse (mmroanhorse@navajo-nsn.gov); Kerl, Paul A; Records (LM)
Subject: [External_Sender] Trip report - Shiprock Standpipes
Attachments: 042419SHP-standpipe_repair_trp_ddclean.pdf

Hello Nick-

Per our workplan *Proposed Decommissioning Plan for Cell Cover Standpipe, Shiprock, New Mexico, Disposal Site* (S19957), we completed the decommissioning of the standpipes on the cover of the Shiprock disposal cell. A trip report that describes our work on this project is attached for your review and records.
Please contact me if you have questions or comments on this project.

Thank you,
- mark

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U.S. DEPARTMENT OF ENERGY | Legacy Management

To:	David Miller, Navarro
From:	David Dander, Navarro
Date:	April 25, 2019
CC:	Daniel Nordeen, Navarro Engineering Ellen Tomlinson, Navarro Environmental and Spatial Data Management Anthony Martinez, Navarro Safety and Health / Radiological Control
Re:	Cell Cover Standpipe Decommissioning Trip Report

Site: Shiprock, New Mexico, UMTRCA Disposal Site

Dates of Decommissioning: September 10–11, 2018

Team Members: David Dander (Navarro) and Anthony Martinez (Navarro)

Task: Decommission cell standpipes 205–208 according to *Proposed Decommissioning Plan for Cell Cover Standpipe, Shiprock, New Mexico, Disposal Site* (S19957)

Integrated Work Control Process:

- *Minor Work Task (MWT)* form (LMS 1020), SHP18-10;
- *Environmental Review Form (ERF)* (LM-Form-4-20.3-4.0-0.1), August 8, 2018;
- *Environmental Review and Concurrence (ERC)* (email), August 8, 2018;
- *Environmental Assessment of Ground Water Compliance at the Shiprock Uranium Mill Tailings Site* (DOE/EA 1388), September 2001;
- *NEPA Categorical Exclusion Determination: Routine monitoring, maintenance, research studies, general site, and administrative actions at the Shiprock, NM, Disposal Site* form (LM 02-11), April 2011;
- *Job Safety Analysis (JSA): Environmental Monitoring Operations at LM Sites* form (LMS 17480), expires January 19, 2019; and
- *Plan of the Day/Plan of the Week* form (LMS 2130), September 10–14, 2018

Field Summary:

On September 10, 2018, David Dander (project hydrogeologist) visited the radon barrier stockpile shown on Figure 1, filled eight 4-gallon buckets with radon barrier material, and staged the buckets at the northeast access point to the cell along with one 4-gallon bucket of water from the municipal hydrant in front of the Abandoned Mine Lands office in Shiprock. A tracked utility task vehicle (UTV) was delivered to the site and staged at the same location (see Photograph 1).

On September 11, 2018, David Dander and Anthony Martinez (radiological control technician [RCT]/Safety and Health representative) loaded equipment, materials, water, and radon barrier material into the UTV and proceeded to the top of the cell.

Water levels and total depths were measured at the five 1.75-inch aluminum access tubes, or standpipes, as shown in Table 1 below (see Photographs 2–5).

Standpipe ID	Standpipe Details	Depth to Water (feet below top of casing)	Total Depth (feet below top of casing)	Stick-up Height (approximate feet)
205	1.75-inch/aluminum	10.2	11.7	1.0
206	1.75-inch/aluminum	11.2	12.2	1.0
206B	1.75-inch/aluminum	8.2	9.2	2.0
207	1.75-inch/aluminum	None	2.5	1.0
208	1.75-inch/aluminum	9.3	10.8	1.0

Table 1. Current Standpipe Condition Details

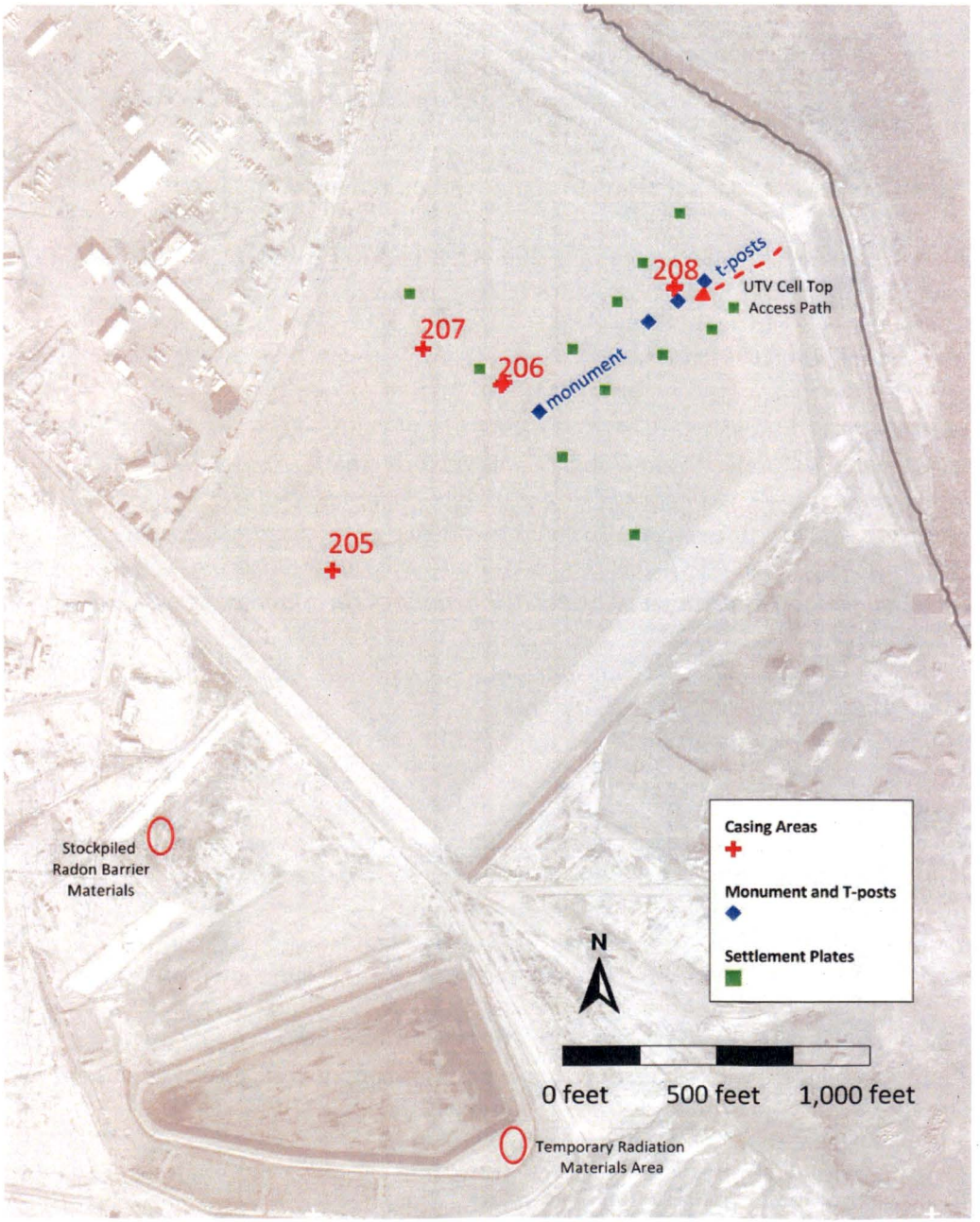


Figure 1. Map of Shiprock Cell, Standpipes, and Relevant Features

Water levels had not been previously measured. Because four of the standpipes had only a minor amount of water (1.0–1.5 feet), a decision was made to just leave the water in standpipes and begin placing the initial lift of radon barrier material within, to avoid potential contact with cell water. Old, dedicated, ¼-inch polyethylene sample tubing was removed from standpipes where present. This tubing was scanned for radioactivity, and one section of tubing was slightly above background and therefore bagged and labeled as Radioactive Materials by the RCT. This radioactive material was subsequently transported by the RCT to Grand Junction Disposal Site and place in that Radioactive Materials Area for storage.

Radon barrier materials were sieved through a ¼-inch screen, and dry material was used for the initial lift, which was slightly over 1.5-feet, to avoid contacting cell water on the compaction rod (see Photograph 6). Subsequent lifts used moisture-conditioned radon barrier material mixed in a bucket, then placed and packed in 6-inch lifts up to near surface. The standpipe top and packing rod were scanned for radioactivity at each location, and scans did not detect anything above background.

Large riprap was pulled away from each 1.75-inch standpipe. The bedding layer was also dug out into a separate pile, and no bentonite seal was observed around the standpipes. The extensive deposition of windblown silts within the bedding layer made it difficult to differentiate from the radon barrier below, except the bedding layer was a bit looser and included more large particles. An excellent example of this windblown deposition process was observed while this work was being performed (i.e., a dust devil), as shown in Photograph 7. Profiles of the riprap, bedding layer, and upper radon barrier at each location are shown in Photographs 8–11.

It was not possible to cut the aluminum standpipes from the inside, so they were cut from the outside as low as possible, about a foot below the top of the radon barrier. Radon barrier material was compacted up to the cut point, after which the aluminum top was hammered inward to remove any sharp rim.

Additional moisture-conditioned radon barrier material was placed and then packed in lifts of 6 inches or less above the cut standpipes and the adjacent radon barrier, mounding slightly from the adjacent bedding layer (with windblown silts). The compaction tool shown in Photograph 12 was used to compact the radon barrier near the surface to final levels (see Photographs 13–15). Rock riprap was pulled back into place, and a painted rock was left above each abandoned standpipe.

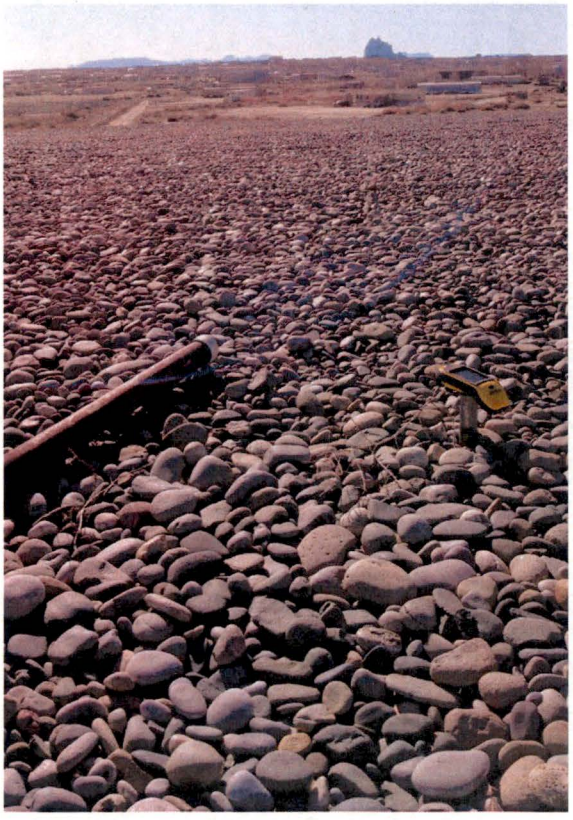
Rusted steel casings (3-inch) were also present at the four locations (205–208) shown in Figure 1 and Photographs 1–4. Each had apparently been previously backfilled to surface (top of radon barrier) level and subsequently rusted through. The one standing 3-inch casing at location 208 (see Photograph 4) broke off when pushed. The fragmented rusty remnants left in the ground at each location were dug out as best as possible several inches into the radon barrier. A slight mound of radon barrier material was placed and compacted above each former 3-inch casing location before riprap was pulled back into place. At location 205, the breakoff point was never located although the steel casing was lying in the area. A painted rock was left at that approximate location based on fragmented iron seen in the riprap (see right side of Photograph 16). A painted rock was left at the sites of all nine abandoned standpipes (see Photographs 16–19); coordinates were already in the Environmental Quality Information System (EQuIS) database.

Due to the origin all removed aluminum, steel casings, and scrap debris were transported to the Temporary Radiation Materials Area shown in Figure 1, although radioactivity scans detected nothing above background. The labeled bag with contaminated section of polyethylene tubing was returned to the Grand Junction, Colorado, Disposal Site by the RCT.

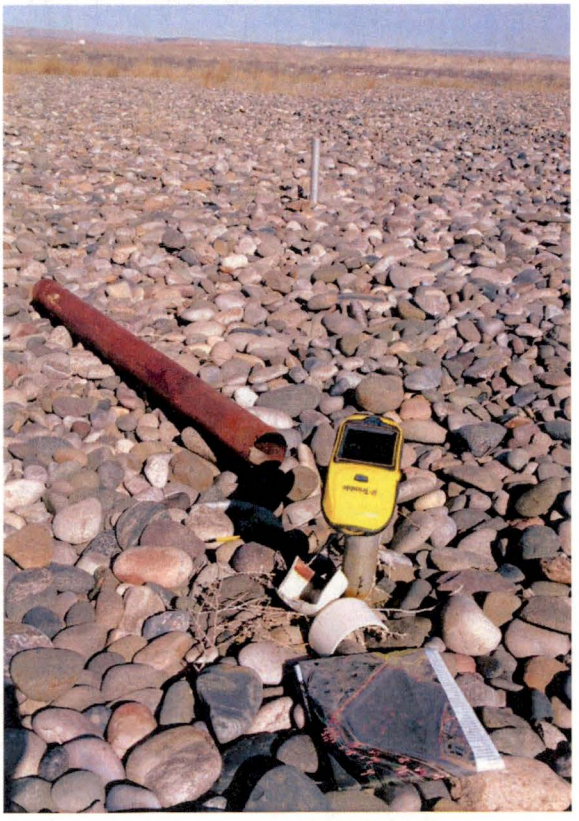
The Environmental and Spatial Data Management team updated the EQuIS database to show these points (0205, 0206, 0206B, 0207, and 0208) as abandoned. These former access tubes are not listed in the Geospatial Environmental Mapping System (GEMS) database.

Photographs

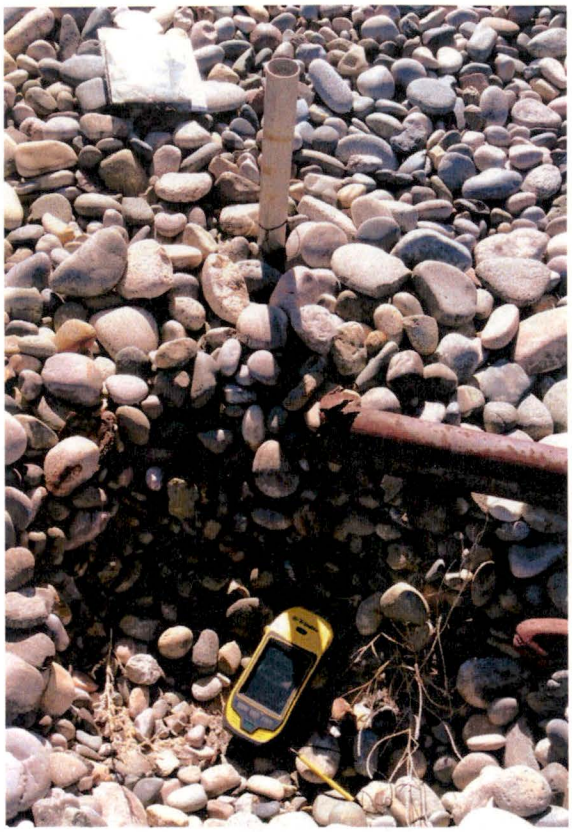
Photograph 1. Tracked UTV



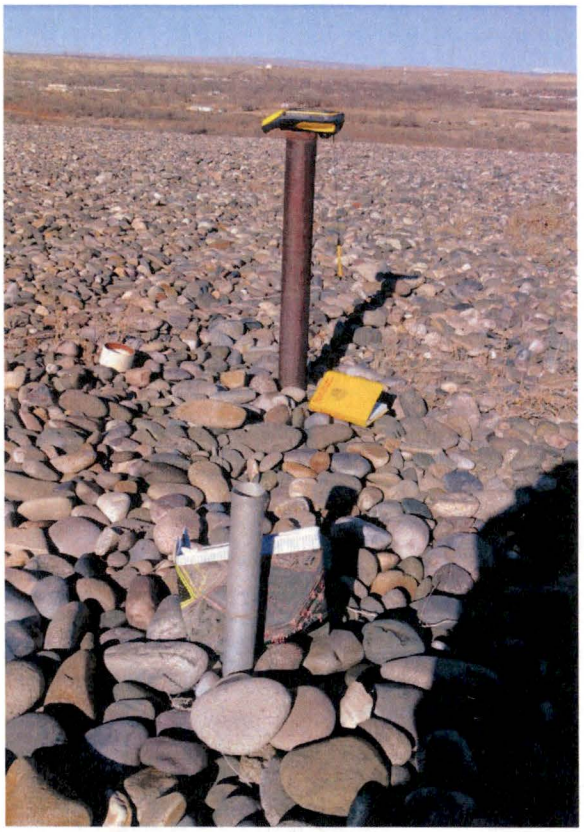
Photograph 2. Location 205



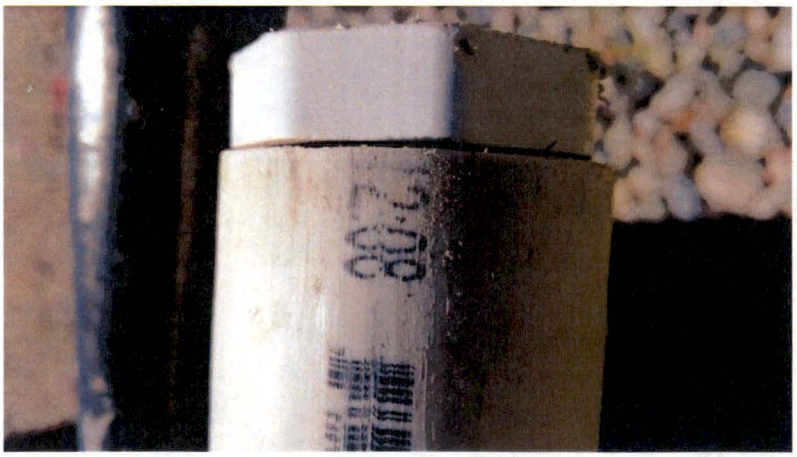
Photograph 3. Location 206



Photograph 4. Location 207



Photograph 5. Location 208



Photograph 6. Casing Compaction Rod

Photograph 7. Dust Devil Approaching Cell

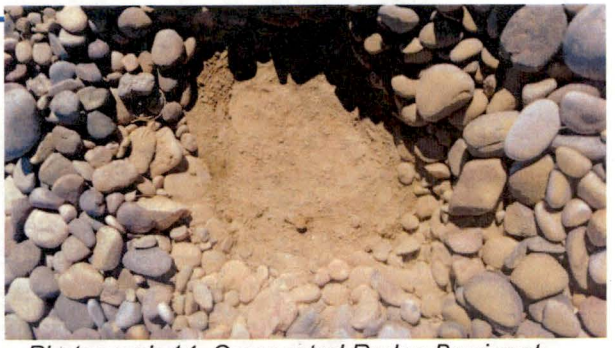
Photograph 8. Location 208 Riprap Dug Out

Photograph 9. Location 206 Riprap Dug Out

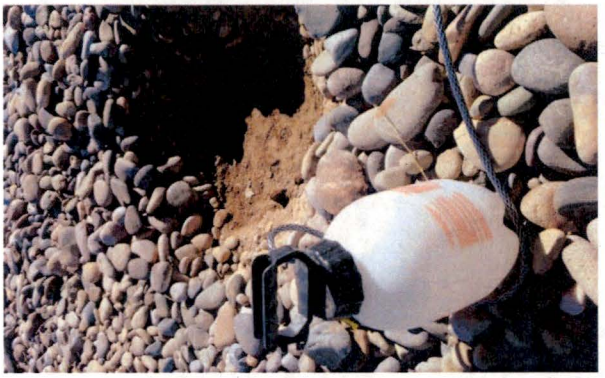
Photograph 10. Location 207 Riprap Dug Out

Photograph 11. Location 208 Riprap Dug Out

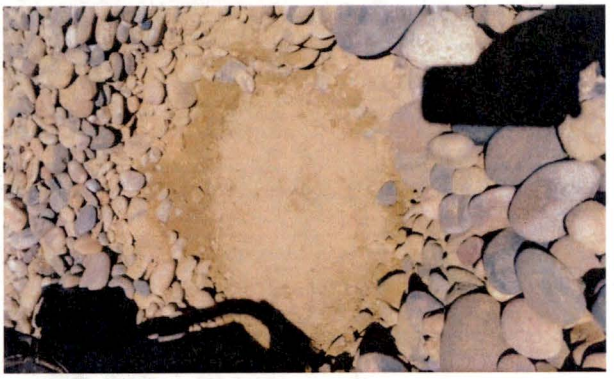
Photograph 12. Near Surface Compaction Tool Used



Photograph 14. Compacted Radon Barrier at Location 206B



Photograph 13. Compacted Radon Barrier at Location 206

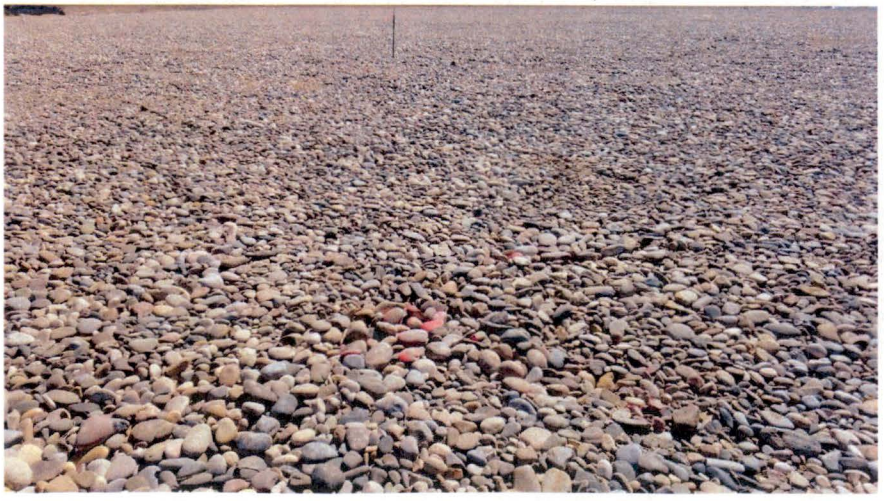


Photograph 15. Compacted Radon Barrier at Location 205

Photograph 16. Final Surface at Location 205

Photograph 17. Final Surface at Location 206

Photograph 18. Final Surface at Location 207



Photograph 19. Final Surface at Location 208