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6 **IN THE UNITED STATES DISTRICT COURT**
7 **FOR THE DISTRICT OF ARIZONA**
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9 El Paso Natural Gas Company, LLC,

10 Plaintiff,

11 v.

12 United States of America, et al.,

13 Defendants.
14
15

No. CV14-8165-PCT-DGC

ORDER

16 This case concerns environmental liability under the Comprehensive Environmental
17 Response, Compensation, and Liability Act (“CERCLA”) for 19 uranium mines located
18 near Cameron, Arizona, on the Navajo Nation Reservation (the “Mine Sites”). Plaintiff
19 El Paso Natural Gas Company, LLC, whose predecessors operated the mines in the 1950s
20 and 1960s, brings claims against Defendants United States of America, the Department of
21 the Interior (“DOI”), the Bureau of Indian Affairs (“BIA”), the United States Geological
22 Survey (“USGS”), and the Department of Energy (“DOE”) (collectively, the “United
23 States”) for cost recovery and contribution. Doc. 55 ¶¶ 1-2.¹ The United States asserts a
24 CERCLA counterclaim against El Paso for contribution. Docs. 53, 66.²
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26 ¹ The Nuclear Regulatory Commission was dismissed on May 5, 2016. *See* Doc. 72.

27 ² The 19 Mine Sites consist of sites 1-12, 14, and 17, originally permitted by Charles
28 and Evan Huskon, and sites 20-22 and 24, originally permitted by Rare Metals Corporation.
The Court will refer to the sites generally as “Mine Sites” and specifically as “Huskon”
followed by the site number or “Ramco” (for Rare Metals) followed by the site number.

1 El Paso stipulates that it was an operator of the Mine Sites for purposes of CERCLA
2 liability (Doc. 108), and the Court previously held that the United States is liable as an
3 owner of the land where the mines are located (Doc. 135). The parties assert additional
4 grounds for CERCLA liability against each other and ask the Court to make an equitable
5 allocation of past and future response costs under CERCLA § 113.

6 The Court held an eight-day bench trial in February and March, 2019. Each side
7 presented many witnesses, live or by deposition, and hundreds of exhibits. The parties also
8 submitted extensive proposed findings of fact and conclusions of law, as well as post-trial
9 briefing on specific issues addressed in this order. For reasons set forth below, the Court
10 will allocate 65% of past and future response costs to El Paso and 35% of such costs to the
11 United States.

12 **I. Findings of Fact.**

13 This order sets forth the Court's findings of fact and conclusions of law under
14 Rule 52 of the Federal Rules of Civil Procedure. The Court provides some citations to the
15 record, but the citations should not be regarded as the sole basis for the Court's ruling. The
16 Court's findings and conclusions are based on all of the testimony and exhibits admitted in
17 evidence.

18 **A. The Parties.**

19 El Paso is the corporate successor of Arrowhead Uranium Company ("Arrowhead"),
20 Rare Metals Corporation of America ("Rare Metals"), and El Paso Natural Gas Company.
21 Doc. 159 at 8.³ Arrowhead and Rare Metals mined uranium at the Mine Sites. Arrowhead
22 was one of the original uranium mining companies in the Cameron region of Northern
23 Arizona, operating from 1952 to 1954. Ex. 28 at 7-8. Rare Metals was formed in 1954 to
24 prospect, explore, and acquire properties containing uranium deposits and other valuable
25 minerals. Rare Metals acquired Arrowhead in December 1954 and took over its uranium
26 mining operations. *See* Exs. 1040-44. Rare Metals also engaged in uranium exploration

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28 ³ Throughout this order, the Court will refer to Arrowhead, Rare Metals, and El Paso collectively as "El Paso" unless the context requires identification of a specific entity.

1 and development in Utah, New Mexico, California, and other locations. Exs. 1041 at 7;
 2 1042 at 6, 8; 1043 at 5-7, 9. Rare Metals merged with El Paso in 1962. Ex. 1056. El Paso
 3 also takes responsibility for the mining activities of Cameron Mining Company at several
 4 of the Mine Sites. Doc. 159 at 8.

5 The land where the Mine Sites are located is owned by the United States in trust for
 6 the Navajo Nation. *See* 25 U.S.C. § 640d-9(a); Doc. 159 at 7. The DOI and the BIA, as
 7 part of their tribal trust responsibilities, oversaw some aspects of the mining permits and
 8 leases for the Nation. Doc. 159 at 8; Ex. 12 at 2. The USGS, which is part of the DOI,
 9 collects, analyzes, monitors, and provides information about natural resources. Docs. 1
 10 ¶ 19; 23 ¶ 19. DOE is the successor agency to the former Atomic Energy Commission
 11 (“AEC”). Doc. 23 ¶ 20. After World War II, the AEC was responsible for creating and
 12 managing a program to procure uranium for nuclear weapons, known as the Domestic
 13 Uranium Procurement Program (“DUPP”). Ex. 74 at 6.

14 **B. The Cold War and the Domestic Uranium Industry.**

15 The United States’ use of atomic bombs in Japan both hastened the end of World
 16 War II and sparked the Cold War with the Soviet Union. Both nations aggressively
 17 developed nuclear weapons. Obtaining uranium, a naturally occurring metal that was an
 18 indispensable component of such weapons, became a driving objective of the United
 19 States’ national defense effort. Doc. 158 ¶ 12.

20 In 1946, Congress passed the Atomic Energy Act, which formed the AEC. *See* 60
 21 Stat. 755. The Act also established the DUPP, a program for “the production, ownership,
 22 and use of fissionable material to assure the common defense and security and to insure
 23 the broadest possible mining of the fields.” Ex. 74 at 6. Viewing foreign sources of
 24 uranium as unreliable, the United States sought, through the DUPP, to locate and develop
 25 domestic sources using a combination of government-led exploration and private enterprise
 26 incentives. Tr. at 94-95. At the time, the federal government was the only authorized
 27 purchaser of uranium in the United States. Atomic Energy Act of 1946 § 5(2); Ex. 74 at 14.

1 Between 1948 and 1956, the AEC published nine circulars offering guaranteed
2 minimum prices and bonus payments for uranium ore (the “Circulars”). *See* Ex. 41.
3 Circulars 3, 4, 5, and 6 applied to uranium mining on the Colorado Plateau, a geographic
4 area encompassing some 140,000 square miles in Arizona, Utah, Colorado, and New
5 Mexico. Ex. 1002; Doc. 159 at 7. Circular 3 guaranteed, for three years, a minimum price
6 and “development allowance” of fifty cents per pound for uranium ore of .15% grade or
7 more. Ex. 41 at 3-4; *see also id.* at 8-9 (Circular 5 Revised). Circular 4 established a
8 haulage allowance of six cents per mile for the first 100 miles. *Id.* at 5. Circular 5 also
9 guaranteed a minimum price and expanded the development allowance to ore with uranium
10 concentrations as low as .10%. *Id.* at 6. Circular 6 created an additional bonus for the
11 production of uranium ore from new domestic mines. *Id.* at 13-14.

12 The AEC assisted the young domestic uranium industry by conducting geologic
13 surveys, furnishing free testing and assaying services, and agreeing to purchase uranium
14 ore. Ex. 25 at 13. The AEC established ore-buying stations in uranium-producing areas.
15 *Id.* The AEC’s assistance programs included research and development that led to
16 improvement in milling processes and other mining-related innovations. *Id.*; *see also*
17 Chenoweth Depo. Jan. 15, 2014, at 85.⁴

18 Beginning in 1948, the AEC, assisted by the USGS, operated a program of uranium
19 exploration on the Colorado Plateau and several other western states. Ex. 25 at 14. The
20 program involved temporary withdrawal of some 700 square miles of public domain land
21 for exploration, geologic studies, drilling, examination of samples, and airborne
22 reconnaissance. *Id.* The AEC employed a contractor, Walker Lybarger, to use a bulldozer
23 to uncover any uranium outcrops that were discovered. Chenoweth Depo. Jan. 15, 2014,
24 at 103.⁵ Ore found on AEC land was leased to private parties directly through the AEC in
25 return for a royalty on ore production. Ex. 25 at 14; *see also* Chenoweth Depo. Jan. 15,

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27 ⁴ The relevancy and Rule 403 objections to this deposition testimony are overruled.
28 When the Court relies on any other deposition testimony submitted by the parties to which
an objection has been made, the Court will state its ruling in this order.

⁵ The Rule 403, 602, and 802 objections to this deposition testimony are overruled.

1 2014, at 79-82. The AEC also undertook an access road program under which the AEC,
2 the Bureau of Public Roads, and various state agencies improved over 1,200 miles of roads
3 in Arizona and other states to facilitate uranium exploration and mine development. Ex. 25
4 at 15.

5 In July 1952, Charles Steen, an independent prospector, found uranium on the
6 Colorado Plateau south of Moab, Utah. *See* Tr. at 56-57, 1600. Steen made over a million
7 dollars on the ore deposit, and his success motivated many others to pursue uranium
8 mining, launching a gold-rush-like interest in prospecting for uranium. Tr. at 57.

9 **C. Uranium Mining on the Navajo Reservation.**

10 Because the 19 Mine Sites are all located on the Navajo Reservation, both the
11 Navajo Nation and the federal government were involved in transactions affecting the sites.
12 Generally, four permits or leases are required for uranium mining: (1) prospecting permits,
13 (2) drilling and exploration permits, (3) mining permits, and (4) mining leases. *See* Ex. 31
14 at 10. As of 1951, the Navajo Nation did not require a separate drilling and exploration
15 permit (Ex. 1075) and required only non-Navajos to apply for prospecting permits (Ex. 31
16 at 10). In 1953, the Nation's mining regulations were updated to require drilling and
17 exploration permits. Ex. 1078. The new regulations also required any prospector, Navajo
18 or non-Navajo, to apply for a prospecting permit. *Id.* at 2. A non-Navajo permit holder
19 could negotiate a mining lease with a tribal advisory committee. *Id.*

20 Permits were approved by the Navajo Tribal Council and the area director of the
21 BIA. *See* Tr. at 160-61; *see, e.g.*, Ex. 294A. All rents and royalties were paid to the United
22 States Treasury for deposit exclusively in Navajo tribal funds. *See* Tr. at 203, 523. The
23 permits contained provisions related to the trust oversight responsibilities of the DOI and
24 required permittees to (1) "conform to any and all regulations of the Secretary of the
25 Interior"; (2) receive approval from the Tribal Council and the Secretary of the Interior
26 before assigning the permit; and (3) allow inspection of permitted premises and operations
27 by BIA personnel. Ex. 294A at 3-4. These provisions and the DOI oversight of the leases
28 were consistent with the DOI's trust duties over all reservation mining. *See* Tr. at 162-63,

1 90 (the lease authorization requirement is consistent with all mining contracts on the
2 Navajo reservation); Ex. 75 (example of a lease rejected by the BIA consistent with its
3 tribal trust duty); Ex. 13 (delegating approval of leases to the Secretary of the Interior
4 because it was in a better position to make profitable lease arrangements for tribes); *see*
5 *also Navajo Tribe of Indians v. United States*, 9 Ct. Cl. 227, 232 (1985) (noting that the
6 United States has a responsibility to supervise the affairs of Indian tribes). The Navajo
7 Nation exercised independent decision-making authority and had a strong interest in
8 developing uranium resources on tribal lands, and that the United States supported the
9 Nation's efforts consistent with its role as tribal trustee. Tr. at 893-95, 899-904, 941-42,
10 988-89.

11 **D. The Mine Sites.**

12 In 1952, Charles Huskon, a Navajo prospector who worked for AEC contractor
13 Walker Lybarger, discovered a natural uranium outcrop that would later become Huskon 1.
14 Ex. 28 at 6. In July 1952, Huskon and his son left the contractor to work for Arrowhead.
15 *Id.* In August and September, 1952, Huskon received mining permits for Huskon 1, 2, 3,
16 4, 5, 6, 7, and 8, and assigned them to Arrowhead. Ex. 294D. In Apr. 1953, the BIA
17 approved a mining permit for Huskon 9, 10, and 11, which Huskon also assigned to
18 Arrowhead. Ex. 24 at 53. Huskon 12, 14, and 17 were surveyed and located in December
19 1953 and January 1954 (Tr. at 525-27; Ex. 1023), but permits were not obtained until
20 March 1954 (Ex. 294D).

21 Rare Metals acquired Arrowhead in December 1954 and took over all of its uranium
22 mining operations. *See* Exs. 1040-44. In 1955, mining permits for Ramco 20, 21, and 22
23 were issued to Navajo prospectors and assigned to Rare Metals. Ex. 294D. These sites
24 were converted to mining leases in 1959. *Id.* Ramco 24 was permitted by a Navajo
25 prospector in 1957 and assigned to Rare Metals. *Id.*

26 In 1959, Rare Metals allowed Cameron Mining Company, an independent
27 contractor, to perform mining operations at sites where Rare Metals had ceased operations.
28 Doc. 159 at 8; Tr. at 499-500. These included Huskon 1, 2, 3, 6, 10, 11, 12, and 17, and

1 Ramco 20, 21, and 22. Exs. 28 at 13; 1165; 1166; Prince Depo. Oct. 9, 1996, at 88-89.
2 Rare Metals relinquished its rights to Ramco 24 in 1958, and its rights to the remaining
3 Mine Sites during the first half of the 1960s. *See* Ex. 294D.

4 **E. Three Mining Phases.**

5 At trial and in their briefs, the parties focused on three phases of mine operations:
6 exploration, mining, and reclamation. The Court makes the following findings of fact with
7 respect to each phase.

8 **1. Exploration.**

9 During exploration, an ore deposit is located through prospecting, confirmed, and
10 uncovered to determine its “dimension, grade, and continuity.” Tr. at 216. Common
11 exploration methods in the 1950s included drilling and rim stripping. Tr. at 282. El Paso
12 concedes that there is no evidence the United States ever conducted exploration activities
13 at the Ramco sites (Tr. at 62), and El Paso does not seek contribution for exploratory
14 drilling that occurred at any of the Huskon mines (Tr. at 17). During trial, El Paso also
15 stated that it would assume responsibility for all exploration activities at Huskon 5, 6,
16 and 9. Tr. at 348-49. This order, therefore, focuses on exploration at Huskon 1, 2, 3, 4, 7,
17 8, 10, 11, 12, 14, and 17. El Paso claims that the United States engaged in rim stripping at
18 each of these sites. The United States disagrees.

19 Rim stripping occurs when a bulldozer excavates soil, referred to as “overburden,”
20 from the top of an ore deposit to expose the mineralized zone. *See* Tr. at 350. During a
21 45-day period between December 19, 1953 and February 3, 1954, the AEC conducted rim
22 stripping in the Cameron area. Exs. 58; 91 at 2; 129 at 20; 1258. According to a report
23 prepared in 1955 by David Hinckley, an AEC geologist (the “Hinckley Report”), the AEC
24 stripped approximately 45,000 linear feet of soil in the Cameron area during this 45-day
25 window, exposing portions of 15 uranium outcrops. Ex. 129 at 20.

26 Exploratory trenches made during rim stripping can still be seen at many of the Mine
27 Sites today. Some of the trenches are visible in aerial photographs of the sites taken in
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1 1954, and even more are apparent in aerial photographs taken in 1992. The question is
2 who made the trenches.

3 AEC and its contractors used a Caterpillar D7 bulldozer for rim stripping – an 11-ton
4 machine that cut a 29-foot-wide swath with its front blade. *See* Tr. at 330-31; Ex. 129 at
5 20. Arrowhead did not own a machine of this size, but instead used a much smaller Allis
6 Chalmers HD5 front-end loader for work at the Mine Sites. *See* Tr. at 320-22, 441; *see*
7 *also* Maloney Depo. at 117. After it purchased Arrowhead in December 1954, Rare Metals
8 also used D7 bulldozers, as well as larger D8s, for work at the Huskon Mine Sites. *See* Tr.
9 at 542, 551 (Mr. Beahm testifying that there is no dispute that Rare Metals bulldozers were
10 used at the Huskon mines), 1306 (1992 aerial photos suggest that more rim stripping
11 occurred after 1954); Exs. 130 at 6; 1160 (1957 contract with Rare Metals for contractor
12 stripping of overburden); *see also* Chenoweth Depo. Apr. 24, 2014, at 26 (more exploration
13 by private parties after 1956 than by the AEC before 1956).

14 El Paso's mining expert, Douglas Beahm, reviewed historical documents regarding
15 the DUPP and historical aerial photographs. Tr. at 311. He visited the Mine Sites six
16 times. *Id.* On the basis of his investigation, Mr. Beahm testified that the AEC performed
17 rim stripping at Huskon 1-12, 14, and 17. Tr. at 349.⁶ He testified to measuring a total of
18 30.2 acres (or 45,362 linear feet) of exploration disturbance at these Huskon sites. Tr.
19 at 358-59. He noted that trenches he observed generally were 29-feet wide, corresponding
20 to the size of a D7 blade, and that his estimated 45,362 linear feet of trenching aligns with
21 the 45,000 linear feet of AEC rim stripping described in the 1955 Hinckley Report – rim
22 stripping performed by the AEC during the 45-day window in 1953 and 1954. Tr. at 358;
23 *see also* Ex. 129 at 20. Mr. Beahm concludes that all of the AEC's rim stripping in the
24 Cameron area was performed at the Huskon Mine Sites, and constitutes the only rim
25 stripping that occurred at those sites. El Paso also presented an undated internal corporate

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27 ⁶ Mr. Beahm also noted a disturbance at Huskon 26, but he combined Huskon 26
28 with Huskon 11. *See* Tr. at 349. Thus, Mr. Beahm's numbers are applicable to all 15
Huskon sites.

1 memorandum which stated that the AEC bulldozed trenches on Huskon 1-11, 12, 14, and
2 17, and that the company did “[l]ittle bulldozer work . . . except to strip off overburden.”
3 Ex. 119; *see also* Tr. at 366-67.⁷

4 If Mr. Beahm is correct in his conclusion that some 45,000 feet of trenching was
5 done by the AEC at the Mines Sites during the 45-day period described by Hinkley, the
6 trenching would have occurred before the 1954 aerial photos were taken in February 1954
7 and presumably would be visible in those photos. But the government’s aerial photography
8 expert, Mary Sitton, testified that only 13,589 linear feet of rim stripping can be seen within
9 the Mine Sites’ boundaries in the 1954 aerial photographs, with approximately 3,000 linear
10 feet outside of the boundaries. *See* Tr. at 1116.⁸ She identified many trenches visible at
11 the sites today that cannot be seen in the 1954 aerial photographs. She also noted that the
12 1955 Hinckley Report attributes the 45,000 linear feet of rim stripping not to the Mine Sites
13 specifically, but to the general Cameron area, which includes scores of mine sites, and that
14 Rare Metals had heavy bulldozers at the Mine Sites in early 1955 and thereafter – machines
15 capable of creating the trenches observed on the ground today. This evidence persuasively
16 suggests that the trenches at Huskon 1-12, 14, and 17 were not all made by the AEC during
17 a single 45-day period in late 1953 and early 1954.

18 The Court finds Ms. Sitton’s testimony about the aerial photographs to be more
19 credible than Mr. Beahm’s. She has significantly more aerial photography training and
20 expertise than he does, and she obtained aerial photographs from the National Archives
21 and Records Administration, the USGS, and the University of Arizona. Tr. at 1075. Unlike
22 Mr. Beahm, she reviewed the historical aerial photos through a stereoscope, which allowed
23 her to examine them in 3D. Tr. at 1076. The Court does not find credible Mr. Beahm’s

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25 ⁷ El Paso presented evidence of some AEC involvement and reconnaissance in the
26 Cameron area that predates Arrowhead’s mining permits, but it does not specifically refer
to rim stripping. *See* Ex. 179 (sampling at Huskon 1 on September 9, 1952, three weeks
before Arrowhead received its permit).

27 ⁸ Mr. Beahm’s exploration numbers included several areas outside of the mine
28 boundaries. *See* Tr. at 617-18. According to El Paso, the EPA specifically requested that
it examine these locations, but El Paso has not agreed to do any further remediation there.
Tr. 438-41.

1 assertion that virtually all of the trenches seen on the ground today were present in 1954
2 but do not appear in the 1954 aerial photographs because they were obscured by shadows
3 or lack of contrast.

4 The evidence also shows that Arrowhead conducted rim stripping. Mr. Beahm
5 testified that Arrowhead was unable to rim strip by bulldozer because it owned only the
6 HD5 front-end loader, which was incapable of creating the wide trenches observed at the
7 19 Mine Sites. *See* Tr. at 320-22, 441; *see also* Maloney Depo. at 117. And records do
8 indicate that Arrowhead was primarily a hand-digging operation before it was acquired by
9 Rare Metals. *See* Tr. at 323. Further, Dozing with an HD5 front-end loader would require
10 multiple passes to create a trench as wide as a D7's, would create several separate waste
11 piles, and would not create uniform windrows as observed on the side of trenches at the
12 Mine Sites.⁹ But the United States presented evidence that Arrowhead did conduct rim
13 stripping with its HD5 at some of the Mine Sites. Arrowhead cofounder George
14 Morehouse stated that he would "strip down with the dozer, actually [he would use] the
15 front end loader as a dozer." *See* Ex. 69 at 9; *see also* Tr. at 1196-97. Expense and
16 production reports for the Huskon sites, before the 45-day AEC exploration window, also
17 indicate that rim stripping was performed by Arrowhead at the Huskon sites. *See* Ex. 1139
18 (report for Huskon 1 for October 24, 1952 to March 31, 1953, stating cubic yards for
19 stripping); 1106 at 6 (indicating that overburden was stripped by an ACD5, which is the
20 Allis Chalmers HD5 dozer); *see also* Tr. at 1199.

21 Based on all the evidence, the Court makes several findings regarding the parties'
22 involvement in the exploration phase.

23 First, El Paso was directly involved in exploration. It has assumed responsibility
24 for all exploration activities at the Ramco sites and Huskon 5, 6, and 9, as well as all
25 exploratory drilling. The evidence described above shows that Arrowhead engaged in rim
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27 ⁹ A windrow is waste material left on either side of a trench dug by a bulldozer, or
28 on one side if the bulldozer's blade is angled. Tr. 332.

1 stripping, and Arrowhead had mining permits at Huskon 1-11 before February 1954. *See*
2 Ex. 294D. The parties agree that Arrowhead had the authority to mine or explore as a result
3 of those permits. *See* Tr. at 1623. In fact, Arrowhead delivered its first uranium ore
4 shipment from Huskon 1 in October 1952, well before the 45-day window when the United
5 States conducted rim stripping activities in the Cameron area. *See* Ex. 28 at 7-8. The Court
6 finds it likely that the rim stripping at Huskon 1-11 was conducted by Arrowhead in
7 conjunction with its mining activities. *See* Tr. at 1099 (noting that exploration and mining
8 occurred at the same time), 1228 (stripping is done at the mines after mining started).¹⁰

9 Second, the Court finds by a preponderance of the evidence that the United States
10 engaged in exploration activities at Huskon 12, 14, and 17. Arrowhead did not receive a
11 permit to mine these sites until March 1954, and yet Ms. Sitton and Mr. Beahm each found
12 disturbances on these sites in the 1954 aerial photos that predate the permits. *See* Ex. 294D.
13 For Huskon 14 and 17, Ms. Sitton noted several linear excavations on the 1954 aerials. *See*
14 Exs. 1354; 1356.

15 El Paso asserts that Arrowhead could not have created these disturbances without a
16 mining permit. *See* Tr. at 1623. Prior to approval of the survey of the mining claims,
17 Arrowhead had no privileges at Huskon 12, 14, and 17. *See* Tr. at 369. El Paso argues that
18 the United States did have permission from the Navajo Nation to prospect and explore on
19 the lands in question before the February 1954 aerials were taken. Tr. at 341-43; Exs. 58;
20 1258. The United States appears to argue that because Arrowhead had a prospecting
21 permit, and because it surveyed and plotted Huskon 12, 14, and 17 in December of 1953

22 ¹⁰ It is also possible that some exploration activities at Huskon 1-11 were conducted
23 by the United States. The AEC certainly conducted rim stripping in the Cameron area, at
24 least in the vicinity of the Mine Sites. *See* Exs. 91; 129 at 20. But the Court is not certain
25 how much, if any, occurred on Huskon 1-11. El Paso's only historical document linking
26 AEC exploration to Huskon 1-11 is the undated internal memo that does not identify the
27 source of its information. *See* Ex. 119. And even if the United States conducted additional
28 rim stripping at these sites, it would not affect the Court's allocation. The exploration
phase of this case is small compared to the mining phase, and El Paso would, in any event,
have welcomed and encouraged AEC rim stripping for more ore at its Mine Sites.

1 and January 1954, Arrowhead had authority to conduct exploration activities on those
2 Sites. *See* Tr. at 1621. The United States asserts that because the Navajo Nation did not
3 utilize exploration and drilling permits at the time, the prospecting permit gave Arrowhead
4 authority to conduct these exploration activities. *See* Tr. at 1623. Further, the United States
5 argues that the minimal level of activity identified by Ms. Sitton would be consistent with
6 staking a mine claim. Tr. at 1622.

7 As already noted, the Navajo Nation initially did not require exploration or drilling
8 permits. Tr. at 896, 1255; Exs. 1075; 1078. Miners applied for a prospecting permit and
9 then for a mining permit. Ex. 1075. In December 1953, the Nation updated its regulations,
10 requiring miners to seek first a prospecting permit, then an exploration permit, and then a
11 mining permit. Tr. at 896; Ex. 1078. Mr. Beahm testified that the mining permit was
12 necessary for miners to conduct exploration activities like those seen clearly at Huskon 14
13 and 17, and that likely occurred at Huskon 12 (Tr. at 117), and the United States failed to
14 present any testimony that supports its theory that a prospecting permit prior to 1953 would
15 allow Arrowhead to conduct exploration.¹¹ Moreover, the fact that the disturbances in
16 question were labeled as linear excavations or seemed to be made by heavy equipment
17 indicates that these disturbances were not made in the normal course of staking a claim.
18 *See* Trial Tr at 1176 (only use a simple compass and steel chain for staking claims).
19 Because the trenches and disturbances at Huskon 12, 14, and 17 were made at a time when
20 Arrowhead likely did not have authority to do the work, and were made by heavy
21 equipment of the kind operated by the AEC contractor, the Court finds by a preponderance
22 of the evidence that the United States conducted rim stripping at these sites.

23 Third, the Court does not find, as El Paso suggests, that the AEC conducted most of
24 the exploration activities at the Mine Sites. Mr. Beahm relied heavily on current site visits
25 where he assumed that bulldozer-sized trenches visible on the ground were made by the
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27 ¹¹ United States witness Jay Brigham testified that an individual with a prospecting
28 permit would have an interest in the particular area. *See* Tr. at 944. But that does not mean
that the individual would have had the authority to conduct exploration activities or to
exclude the United States from conducting exploration activities.

1 AEC during the 45-day window in late 1953 and early 1954. But this view disregards the
 2 fact that the disturbances could have been made at any time during the years of mining by
 3 El Paso, including after 1954 when Rare Metals brought its own D7 and D8 bulldozers to
 4 the Mine Sites. *See* Tr. at 390; Ex. 1158. Mr. Beahm also relied on historical documents
 5 noting that the AEC conducted rim stripping in the Cameron area, but these documents
 6 refer to the entire Cameron area, which contained approximately 100 mines. Tr. at 1147
 7 (Ms. Sitton testifying that she noted other activity in the Cameron area), 1112-14
 8 (discussing mapping anomalies that included linear excavations in the Cameron area
 9 outside the Mine Sites), 1114-15 (Ms. Sitton testifying that the 45,000 linear feet does not
 10 cover just the 19 Mine Sites); *see also* Ex. 1363. And Mr. Beahm's assertion that he
 11 measured approximately 45,000 linear feet of trenching, which matched the Hinckley
 12 Report on AEC activity, is less credible than Ms. Sitton's testimony that most of this
 13 trenching does not appear in the 1954 aerial photographs.

14 In summary, although the Court finds that both El Paso and the United States
 15 engaged in exploration activities at the Mine Sites, the Court does not find that all or even
 16 a majority of it was performed by the United States. The evidence does not enable the
 17 Court to precisely determine the parties' respective exploration activities at the sites, but
 18 this is not an impediment to an overall allocation because the exploration phase is a
 19 relatively minor portion of the relevant activity in this case.

20 **2. Mining.**

21 All of the Mine Sites were open pit mines. Tr. at 1611. They were mined either by
 22 El Paso or one of the orphan companies. The United States never mined or supervised
 23 mining operations at any of the sites. *See* Tr. at 908, 1580; Ex. 69 at 4-5; Chenoweth Depo.
 24 Jan. 16, 2014, at 409; Chenoweth Depo. Apr. 24, 2014, at 23, 57.¹²

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 26 ¹² An orphan under CERCLA is a "party otherwise qualifying as a responsible party
 27 [but who] may be defunct, bankrupt, uninsured, or otherwise lack the resources to bear its
 28 ideal measure of responsibility in monetary terms." *United States v Kramer*, 953 F. Supp.
 592, 595 (D.N.J. 1997). There were five entities that operated the Mine Sites and
 eventually went bankrupt: Utco Uranium, Cameron Mining, B.C. Associates, Domino
 Company, and H.R. Rodgers. *See* Tr. at 743.

1 The Navajo Nation managed uranium mining on the reservation. Tr. at 941-42;
2 Chenoweth Depo. Jan. 16, 2014, at 408-09. The Nation wrote its own regulations,
3 established a department of mining, conducted mining inspections, and hired a mining
4 engineer. Tr. 893-95; Exs. 31 at 8; 62; 1074; 1080. The United States did conduct
5 inspections through the DOI and the Bureau of Mines (“BOM”) to promote mine safety
6 and identify hazards. *See, e.g.*, Exs. 1189-1202; 1207-08; Chenoweth Depo. Jan. 16, 2014,
7 at 409.

8 Initially, Arrowhead mined with picks, shovels, wheel barrows, the HD5 loader, and
9 a crew of about twelve workers. *See* Ex. 69 at 10. El Paso’s proposed findings of fact
10 admit that Arrowhead produced almost 4,000 tons of ore in 1953 and more than 8,000 tons
11 in 1954. *See* Doc. 158 ¶ 167. When Rare Metals acquired Arrowhead in December 1954,
12 production at the mines increased significantly. *See* Doc. 158 ¶ 167; Ex. 1334. In 1956,
13 Rare Metals Mines produced nearly 30,000 tons of ore. *See* Doc. 158 ¶ 167. In 1957, the
14 Mines Sites produced over 40,000 tons. Doc. 158 ¶ 167. As of March 1956, an internal
15 company memo stated that Rare Metals had stripped 291,169 tons of native material at the
16 Huskon sites and another 273,857 tons of overburden at the Ramco sites. Ex. 1135.

17 Open pit mines are created by stripping away large amounts of overburden and then
18 removing the ore to an onsite stockpile. *See* Exs. 1190-1210 (safety inspection reports
19 documenting mining methods). El Paso’s excavations at the Mine Sites ranged in size from
20 shallow trenches to large pits up to 2,400 feet long. Exs. 28 at 5; 1190-1210; *see also*
21 Tr. at 1202. Mine development also included roadbuilding. *See* Exs. 1336 (summarizing
22 miles of road built at each site based on El Paso expense and production reports); 1389
23 ¶ 17. A majority of the Cameron area waste-generating activity occurred between 1954
24 and 1961. *See* Exs. 28 at 19; 1334.

25 El Paso disposed of hazardous substances at each of the Mine Sites. *See* Doc. 117
26 ¶ 3. The United States did not direct waste handling or waste disposal. *See* Tr. at 907, 921,
27 1204; Chenoweth Depo. Jan. 16, 2014, at 410. During mining, workers used a Geiger
28 counter to asses wheelbarrow loads of ore and, if a load did not “measure so much on the

1 Geiger counter, they'd dump it over the hill [] someplace." Chenoweth Depo. Jan. 16,
2 2014, at 410-11. Waste rock was dumped out of the way so it would not interfere with
3 mining. Chenoweth Depo. Jan. 16, 2014, at 411; *see also* Ex. 69 at 10 (Arrowhead put
4 waste wherever it was convenient).

5 The AEC bought uranium at the prices and bonuses set by the Circulars. Because
6 miners could grade their uranium on an average monthly basis, they had an incentive to
7 stockpile lower-grade ore and blend it with higher-grade ore to sell to the AEC. Chenoweth
8 Depo. Apr. 24, 2014, at 36. This was a common practice. *See* Tr. at 1610; Ex. 15 at 3;
9 Chenoweth Depo. Apr. 24, 2014, at 36-37.

10 When El Paso opened the Tuba City mill in 1956, it set an ore grade cut-off of .20%
11 because that was more efficient for the mill's operation. Ex. 280; Chenoweth Depo.
12 Apr. 24, 2014, at 163-64 (the ore grade cut-off was up to the mill, if the mill did not want
13 to take the lower grade the AEC did not force them); *see also* Exs. 1231-32 (mining
14 companies complaining that El Paso was not purchasing lower grade ore as permitted by
15 the Circulars). Even before the mill changed the cut-off, miners were more focused on
16 higher-grade uranium because it sold for a higher price. Chenoweth Depo. Apr. 24, 2014,
17 at 37 (most miners could not make money at the .10% cut-off, so during the uranium boom
18 the average grade was about .23%).

19 By late 1957, dramatic increases in reported uranium ore reserves and in milling
20 capacity prompted the AEC to announce that "it no longer [was] in the interest of the
21 Government to expand production of uranium concentrate." Ex. 25 at 12. The AEC
22 announced that it would buy "only appropriate quantities of concentrate derived from ore
23 reserves developed prior to November 24, 1958." *Id.* In 1958, the AEC announced that
24 "domestic producers of uranium ores and concentrate" could start making private sales for
25 the peaceful use of atomic energy, but no such sales were actually made until 1966. *Id.*

26 In 1962, the AEC implemented a "stretch-out" program which allowed mining
27 companies to defer delivery of a portion of their contract commitments until 1967 and
28 1968, in return for an AEC commitment to purchase the ore in 1969 and 1970. *Id.*

1 Operations at the Mine Sites phased down as incentives decreased, but there is also
 2 evidence that ore reserves at the Mine Sites were exhausted by this time and no longer held
 3 enough economically viable uranium. Chenoweth Depo. Jan. 16, 2014, at 410-14
 4 (describing the process of using the Geiger counter to measure uranium from a mine; once
 5 it was very low, mining would stop); *see also* Ex. 31 at 7 (“[A]s the known orebodies were
 6 depleted, ore production declined sharply after 1958.”).

7 At the end of a mining lease, there was an inspection to ensure that sites were free
 8 from physical hazards. *See* Tr. at 154; Ex. 1214; *see also* Chenoweth Depo. Apr. 24, 2014,
 9 at 182. Open pits were left unfilled. *See* Prince Depo. Oct. 9, 1996, at 131. Language in
 10 the leases and the customs of the day were to leave mines “timbered,” which meant leaving
 11 the ore body accessible and, in the case of open pit mines, leaving the pit open. *See*
 12 Tr. at 154, 1613 (timbered means the structural integrity of the pit walls).¹³

13 Language in the mine leases also stated that mines were to be surrendered and
 14 returned in good condition except for ordinary wear and tear. *See* Tr. at 1576. El Paso’s
 15 expert, Mr. Dempsey, testified that this provision did not affect the expectation that mine
 16 pits would be left open. *See* Tr. at 1577; *see also* Prince Depo. Oct. 9, 1996, at 114. By
 17 1962, El Paso and its subcontractors stopped all mining at the 19 Mine Sites. Prince Depo.
 18 Oct. 9, 1996, at 68-69.

19 **3. Reclamation.**

20 For almost three decades, the Mine Sites remained largely in the same condition as
 21 when mining ceased, with open pits and waste piles on the properties. In the 1980s, the
 22 Navajo Nation became concerned about possible health impacts of abandoned uranium
 23 mines on the Reservation. Ex. 1275; Prince Depo. Oct. 30, 1996, at 220-21. People were
 24 frequenting the pits for recreational purposes, and livestock was watering at the pits. Prince
 25 Depo. Oct. 30, 1996, at 221-22. As a result, in the early 1990s the Navajo Nation undertook
 26

27
 28 ¹³ There is evidence that the Navajo Nation wanted mines closed after 1959
 (Ex. 1274), but also some suggestion that this applied only to underground mines (Tr. 156).

1 reclamation of 17 of the 19 Mine Sites. Reclamation was not deemed necessary at
2 Huskon 5 and 14. Doc. 159 at 9.

3 Funding for the reclamation was provided through grants from the federal
4 government's Office of Surface Mining ("OSM") under the Surface Mining Control and
5 Reclamation Act ("SMCRA"). Doc. 159 at 9. The Nation's office of Navajo Abandoned
6 Mine Lands ("NAML") developed the plans for reclaiming the mines and submitted grant
7 applications to the OSM. Martinez Depo. at 20-21. The OSM reviewed the applications
8 prior to approving funding. *See id.* The OSM was deferential to the Nation in its review
9 and oversight of the reclamation because of the Nation's status as a sovereign nation.
10 Sassaman Depo. at 126-31. The OSM's role was to oversee the sites for compliance with
11 the NAML plans and to offer advice when necessary. Martinez Depo. 34-36, 40-43;
12 Sassaman Depo. 33-35, 106. All reclamation standards were established by the NAML.
13 Martinez Depo. at 34-35; Sassaman Depo. at 29-30, 35, 56, 74-76.

14 Through five reclamation projects, the NAML (1) restored hundreds of acres of
15 land, (2) backfilled and graded seventeen uranium mine pits formerly operated by El Paso,
16 (3) removed or reduced the slopes of thousands of feet of dangerous highwalls and
17 embankments, (4) contained mining waste underground to prevent erosion and reduce
18 surface exposure, (5) built drainages structures to divert runoff from the pits and waste
19 piles, (6) removed ponds of polluted water that were sometimes used for recreational and
20 agricultural purposes, and (7) provided replacement ponds for livestock and wildlife. *See*
21 Exs. 1279-85 (NAML technical specifications); 1310 (Project three update report); Prince
22 Depo. Oct. 30, 1996, at 261-62. The United States provided the Nation with \$2.4 million
23 in funding for this work. *See* Exs. 1294-1308 (total costs by each site).

24 **F. The Tuba City Mill.**

25 The Tuba City uranium mill was built and operated by El Paso, and purchased ore
26 from Cameron-area mines, including the Mine Sites. The mill is not part of the EPA's
27 current CERCLA directive to El Paso, and the parties disagree on whether its remediation
28 is relevant to the Court's equitable allocation for the 19 Mine Sites at issue in this case.

1 Originally, Arrowhead and Rare Metals shipped ore to the AEC's Bluewater mill in
2 New Mexico. Exs. 1222; 1162; 1163; 1243. In 1954, Rare Metals contacted the AEC
3 about establishing a mill in the vicinity of the Mine Sites, which would significantly reduce
4 haulage costs. Tr. at 1008; Ex. 107. Rare Metals and the AEC agreed that the AEC would
5 operate an ore-buying station in Tuba City until Rare Metals could finish building the mill,
6 and Rare Metals would then take over the ore-buying function. Exs. 1030 at 5; 1222; 1224.
7 In July 1956, Rare Metals completed construction of the mill and began purchasing ore
8 from mines in the area. Exs. 1241; 1235. The mill operated from 1956 to 1966 and
9 produced 80,000 tons of yellow cake uranium for the United States. Ex. 1072 at 25.

10 In the Circulars, the AEC offered to purchase uranium ore above a .10% grade. The
11 Tuba City mill adopted a stricter standard, requiring a grade of .20% on a monthly average
12 basis. Exs. 131; 280; 1040; 1226 at 2.

13 The Tuba City mill generated its own waste pile in the form of "tailings," which
14 consisted of low-level radioactive sand generated from processing uranium ore. Ex. 1317
15 at 8; Prince Depo. Dec. 1, 2016, at 43-44. El Paso also disposed of liquid wastes from ore
16 processing in an impoundment pond constructed near the mill. Exs. 1317 at 101; 1319 at 5.
17 These operations contaminated groundwater at the site. Tr. at 1262.

18 El Paso stopped operation of the Tuba City mill in 1966 because uranium sources
19 in the area were exhausted. *See* Ex. 1240 at 2. The Arizona Atomic Energy Commission
20 ("Arizona AEC") oversaw the termination of El Paso's mill license. El Paso was required
21 to stabilize the tailings pile (Ex. 1242), and consulted with the federal BOM to develop a
22 stabilization plan (Ex. 176; Caulkins Depo. at 20-22).¹⁴ El Paso's plan was submitted to
23 and approved by the Arizona AEC, the United States Public Health Service, and the Navajo
24 Minerals Resource Office. *See* Ex. 173. El Paso implemented the plan, and the Arizona
25 AEC terminated El Paso's license, acknowledging that El Paso "effectively
26 decontaminated the mill building," "stabilized the tailings pile against wind erosion," and
27 "fenced and posted the tailings pile." Ex. 177; *see also* Tr. at 1252; Ex. 176.

28 ¹⁴ The Rule 401 and 403 objections to this testimony are overruled.

1 Eventually, the United States remediated the mill site under the Uranium Mill
2 Tailings Radiation Control Act (“UMTRCA”). Ex. 1317 at 5, 18-20; 42 U.S.C. § 7901(a).
3 In UMTRCA, Congress acknowledged that uranium tailings at active and inactive mill
4 sites may pose a significant radiation health hazard to the public. *See* § 7901(a). UMTRCA
5 was designed to “stabilize and control [mill] tailings in a safe and environmentally sound
6 manner and to minimize or eliminate radiation hazards to the public.” § 7901(b). In effect,
7 the federal government assumed responsibility for the clean-up of uranium-producing mills
8 for the good of the country. Tr. at 1243. Where clean-up occurs on Indian lands, as at the
9 Tuba City mill, the government pays all costs. Ex. 1317 at 9.

10 The Tuba City mill remediation occurred in two phases from January 1985 to Apr.
11 1990. Ex. 1317 at 19. Through the end of 2018, the United States has spent \$34,143,000
12 in surface remedial action costs and \$59,426, 656 in groundwater remedial action costs, for
13 a total of more than \$93,500,000. *See* Ex. 1321. The monitoring process will continue
14 into perpetuity (Ex. 1320 at 7), with the United States’ future response costs projected to
15 reach \$37,288,757 (Ex. 1321).

16 **G. The EPA and Remediation of the 19 Mine Sites.**

17 When the EPA identifies an abandoned uranium mine that contains a hazardous
18 substance, it requests that a potentially responsible party (“PRP”) conduct a Remedial Site
19 Evaluation (“RSE”). *See* 42 U.S.C. §§ 9606, 9607; 40 C.F.R. § 400.15. The RSE
20 investigates the nature and extent of contamination and associated risks. *See* 40 C.F.R.
21 § 400.20. It includes determining the background levels of radiation due to naturally
22 occurring uranium. Stavinoha Depo. at 64-65. In Cameron, background levels vary
23 dramatically from place to place and even within a particular site. *Id.* at 97. After an RSE,
24 the PRP prepares an Engineering Evaluation/Cost Analysis (“EE/CA”), which evaluates
25 potential response actions. Doc. 159 at 10; Tr. at 641.

26 In May 2012, the EPA sent El Paso a “general notice” letter identifying El Paso as
27 a PRP for the Mine Sites. Doc. 159 at 8; Stavinoha Depo. at 29. In 2013, El Paso signed
28 an administrative order of consent (“AOC”) to perform a “limited” investigation. Ex. 263;

1 Stavinocha Depo. at 53-54. El Paso agreed to conduct gamma screening to determine the
 2 lateral extent of disturbed areas within a portion of the 19 Mine Sites. *See* Ex. 263 at 33-34.
 3 El Paso submitted a number of work plans related to background levels and gamma
 4 scanning (Tr. at 610), and has not missed a deadline with the EPA (Tr. at 610-11).

5 In 2017, El Paso agreed to conduct RSEs at Huskon 12 and 14, modifying the
 6 original AOC. *See* Tr. at 613. In 2018, El Paso entered a second AOC amendment to
 7 perform EE/CAs at Huskon 12 and 14. *See* Tr. at 613-14. El Paso also submitted a draft
 8 for a third modification to perform RSEs for the remaining 17 Mine Sites. Tr. at 614. To
 9 date, El Paso has performed draft RSEs for Huskon 12 and 14. *See* Ex. 1325. El Paso has
 10 also prepared a draft EE/CA for both sites. *See* Ex. 285. The EPA has not yet provided
 11 comments on these drafts. *See* Tr. at 630. The EPA has not selected a final remedy for
 12 Huskon 12 and 14, and El Paso has not agreed to perform a remedy. Tr. at 666.

13 **H. Costs at Issue in this Order.**

14 For purposes of the actual response costs to be allocated in this order, the parties
 15 have agreed to a cut-off date of August 1, 2016. El Paso alleges that it has incurred
 16 recoverable response costs at the Mine Sites totaling \$1,393,448 through August 2016, and
 17 has paid another \$502,500 to the United States to reimburse certain EPA response costs.
 18 *See* Doc. 159 at 13. The United States does not dispute these amounts and stipulates that
 19 they are necessary, recoverable, and consistent with the National Contingency Plan. *Id.*
 20 12-13.¹⁵

21 The parties made clear at the final pretrial conference on February 13, 2019, that
 22 they are asking the Court not only to allocate these existing response costs, but also to enter
 23 a declaratory judgment establishing the allocation between them for purposes of all
 24 response costs related to the Mine Sites, including amounts to be incurred in the future.
 25 The parties agree that the Court need not address interest amounts due under CERCLA,

26
 27 ¹⁵ The United States originally sought to recover response costs under § 107 in its
 28 counterclaim, but this claim was resolved in a consent decree between the parties. *See*
 Doc. 66. The consent decree did not resolve the United States' contribution claim under
 § 113. *Id.*

1 stating that they can agree on such amounts once the Court sets its allocation. The parties
 2 further stipulate that the Court should declare their allocated shares of liability as if all
 3 response costs incurred by each party were allocated under § 113(f). Doc. 159 at 13.

4 **II. Liability.**

5 A contribution claim under § 113(f) includes four elements: (1) a release or
 6 threatened release of hazardous substances; (2) from a facility as defined by CERCLA
 7 § 9601(9); (3) which has caused the plaintiff to incur response costs that are necessary and
 8 consistent with the National Contingency Plan; and (4) that the defendant is a PRP under
 9 CERCLA § 107(a). 42 U.S.C. § 9607(a); *see also* Doc. 159 at 10-11; *City of Colton v. Am.*
 10 *Promotional Events, Inc.*, 614 F.3d 998, 1002-03 (9th Cir. 2010); *Carson Harbor Village,*
 11 *Ltd. v. Unocal Corp.*, 270 F.3d 863, 870-71 (9th Cir. 2001). The parties do not dispute that
 12 the first three elements of § 113(f) liability are satisfied in this case, so the liability question
 13 focuses on PRP status. Doc. 159 at 10-13.

14 There are four types of PRP liability: owners, operators, arrangers, and transporters.
 15 42 U.S.C. § 9607(a). As noted above, El Paso stipulates that it was an operator of the Mine
 16 Sites and the Court previously held that the United States is liable as an owner. Docs. 108,
 17 135. El Paso argues that the United States is liable as an operator and arranger during all
 18 of the mining phases (Doc. 187 at 1-13), and the United States asserts that El Paso is liable
 19 as an arranger (Doc. 186 at 2-6).¹⁶

20 **A. United States' Operator Liability.**

21 CERCLA imposes liability on “any person who at the time of disposal of any
 22 hazardous substance . . . operated any facility at which such hazardous substances were
 23 disposed of.” 42 U.S.C. § 9607(a)(2). The word “operated” suggests that the liable party
 24

25 ¹⁶ The United States further argues that El Paso is liable as an owner because it
 26 owned equipment at the Mines Sites and disposed of mining waste with that equipment.
 27 *See* Doc. 157 ¶ 71. CERCLA broadly defines “owner” to include an owner of a “facility,”
 28 and defines “facility” to include “equipment.” 42 U.S.C. §§ 9601(9), 9601(20)(A)(ii). But
 case law is sparse on whether CERCLA liability can be premised on ownership of
 equipment at a superfund site. The Court need not wrestle with this question, however,
 because El Paso already is liable as an operator and, in the Court’s view of the equities,
 adding equipment-owner liability would not change El Paso’s equitable allocation.

1 actually took some action with respect to the facility. The Supreme Court has agreed,
 2 holding that “an operator must *manage, direct or conduct* operations specifically related to
 3 pollution[.]” *United States v. Bestfoods*, 524 U.S. 51, 66-67 (1998) (emphasis added). The
 4 Ninth Circuit similarly has held that an operator must play an “active role in running the
 5 facility, typically involving hands-on, day to day participation in the facility’s
 6 management.” *Long Beach Unified Sch. Dist. v. Dorothy B. Godwin Cal. Living Tr.*,
 7 32 F.3d 1364, 1367 (9th Cir. 1994).

8 El Paso suggests that operator liability can be imposed on the basis of mere
 9 “authority to control” operations at a site, even if that authority is not exercised. Doc. 187
 10 at 2. The Ninth Circuit did state in *Kaiser Aluminum & Chemical Co. v. Catellus*
 11 *Development Corp.*, 976 F.2d 1338 (9th Cir. 1992), that operator liability applies to a party
 12 that “had the authority to control the cause of the contamination at the time the hazardous
 13 substances were released into the environment.” *Id.* at 1341. But *Kaiser* did not hold that
 14 unexercised authority is sufficient for operator liability. Rather, it imposed operator
 15 liability on a party that actually excavated and graded the contaminated property, spreading
 16 hazardous waste. *Id.* at 1339-40. *Kaiser*’s holding that such an actor is liable as an operator
 17 comports with the Supreme Court’s instruction that operator liability “must be read to
 18 contemplate ‘operation’ as including the *exercise* of direction over the facility’s activities.”
 19 *Bestfoods*, 524 U.S. at 71 (emphasis added). It also squares with the Ninth Circuit’s
 20 teaching that a party cannot be liable as an operator for merely “stand[ing] by and fail[ing]
 21 to prevent the contamination.” *Long Beach*, 32 F.3d at 1367.¹⁷

22 **1. Exploration.**

23 El Paso asserts that the United States directed, managed, or conducted rim stripping
 24 at several of the Huskon Mine Sites. *Id.* at 4. As explained above, the Court finds by a
 25 preponderance of the evidence that the United States engaged in rim stripping at Huskon

26
 27 ¹⁷ Judge Winmill harmonized the Ninth Circuit’s language in *Kaiser* and *Long*
 28 *Beach* with this definition: “CERCLA operator liability attaches if the defendant had
 authority to control the cause of the contamination at the time the hazardous substances
 were released into the environment and actually exercised such control.” *Nu-W. Min. Inc.*
v. United States, 768 F. Supp. 2d 1082, 1089 (D. Idaho 2011) (citation omitted).

12, 14, and 17. These exploration activities released hazardous substances. *See* Tr. at 316-17, 372, 669, 1186-87. As a result, the United States controlled the “cause of the contamination at the time the hazardous wastes were released into the environment.” *Kaiser*, 976 F.3d at 1341. The United States is liable as a CERCLA operator for its role in rim stripping at these three Mine Sites.

2. Mining.

El Paso argues that the United States was an operator during the mining phase because it exercised control over mining operations through its authority over El Paso’s permits and leases. The evidence cited by El Paso in support of this proposed liability shows that the United States, through the BIA, approved mining permits and leases, possessed the authority to terminate permits and leases, rejected a lease at least once, retained authority to inspect the Mine Sites, required El Paso to comply with relevant regulations, and retained authority to hear disputes between El Paso and the Navajo Nation. *See* Doc. 187 at 5 (citing testimony and exhibits). But this evidence merely establishes that the United States had some “authority to control” what happened at the Mine Sites, not that the United States actually exercised that authority as required for operator liability, as explained above.

Several historical witnesses who worked at the Mine Sites testified that the United States did not have direct involvement in the mining operations. James Maloney testified that he never saw anyone from the federal government at the Mine Sites. Maloney Depo. at 28. George Morehouse reported that there was no federal oversight of the mining operations. Ex. 69 at 4-5. William Chenoweth testified that the AEC did not review or approve mining plans or supervise mining operations. Chenoweth Depo. Jan. 16, 2014, at 409; Chenoweth Depo. Apr. 24, 2014, at 23, 57.

The Court finds that the United States did not “manage, direct, or conduct operations specifically related to pollution,” *Bestfoods*, 524 U.S. at 66-67, and that mere possession of such authority is not enough for operator liability, *Long Beach*, 32 F.3d at 1367. Other cases have reached comparable conclusions. *See Cour D’Alene Tribe v. Asarco Inc.*, 280

1 F. Supp. 2d 1094, 1128-30 (D. Idaho, 2003) (finding no United States operator liability
2 even where compliance with the government's wartime directives was mandatory); *see*
3 *also Miami-Dade County v. United States*, 345 F. Supp. 2d 1319, 1344-46 (S.D. Fla. 2004)
4 (holding that the manual detailing contractors' inspection and quality control
5 responsibilities did not amount to direction of waste disposal practices).

6 El Paso argues that the United States exercised control of the Mine Sites through
7 the AEC and the DUPP by (1) creating the domestic market for uranium ore; (2) exercising
8 authority over the possession, transport, and delivery of the ore; (3) acting as the sole
9 purchaser of the ore; (4) controlling El Paso's profits by controlling ore prices, bonuses,
10 and allowances; and (5) setting the ore-grade cut-off, which determined what level of
11 uranium-bearing materials necessarily would be left at the Mine Sites. Doc. 187 at 6. The
12 Court agrees that the United States influenced the operations of El Paso and other uranium
13 mining companies in the 1950s and 1960s. The DUPP was created to foster development
14 of domestic uranium mines, the AEC actively promoted mining on the Colorado Plateau
15 and in the Cameron area, the government regulated the acquisition and handling of uranium
16 ore and was the sole purchaser of the ore for many years, and the AEC exercised some
17 financial control over the uranium market through the Circulars. But El Paso was not
18 conscripted into the uranium business, and the government did not tell it how to operate its
19 mines or dispose of its waste. El Paso stayed in the business and expanded its operations
20 as long as they were profitable and left the business when they were not. El Paso decided
21 who to hire, how much to pay them, what equipment to use, how much money to invest,
22 where to mine, how to mine, how to dispose of waste, and how long to operate. El Paso
23 excavated the ore, created waste piles, and built the mill that had the effects of increasing
24 the profitability of mining in the Cameron area and promoting the development and
25 expansion of the Mine Sites and other mines. El Paso continued to mine and process
26 uranium at the mill after the United States allowed private party purchases of uranium and
27 announced its stretch-out program, and continued to process ore until the supply was
28 exhausted. *See* Ex. 1240 at 2. Given these facts, the Court cannot conclude that the

1 influence exercised by the United States over uranium mining and markets rose to the level
2 of “manag[ing], direct[ing], or conduct[ing] operations specifically related to pollution,”
3 as required for CERCLA operator liability. *Bestfoods*, 524 U.S. at 66-67.

4 This is true even when the Court considers the most direct influence the government
5 exerted on contamination-creating activities – the Circular’s establishment of a .10% grade
6 cut-off. While it is true that this cut-off resulted in less concentrated uranium-bearing
7 materials being left as waste at the sites, some cut-off level was required. El Paso cannot
8 plausibly argue that no cut-off level should have been established – that even the most
9 minute concentrations of uranium in soil or rock should have been purchased and milled
10 on behalf of the government. This fact is best demonstrated by El Paso’s own .20% cut-
11 off at the Tuba City mill. This level resulted not only in ore below .10% being left at the
12 Mine Sites, but also in ore below .20% being left there. El Paso’s cut-off produced the
13 same on-site contamination as the Circular, and more. The Court cannot conclude that the
14 Circular’s cut-off level constituted sufficient managing, directing, or conducting of
15 pollution-creating operations to give rise to operator liability.

16 Other cases which have considered comparable levels of government influence have
17 reached the same conclusion. *See United States v. Iron Mountain Mines*, 987 F. Supp.
18 1277, 1285 (E.D. Cal. 1997) (“Despite its creation of various incentives and programs to
19 assist mining companies, the government did not compel Mountain Copper to do any
20 mining at Iron Mountain; it did not require Mountain Copper to extract a certain amount
21 of any substance from Iron Mountain; and it did not issue commands to Mountain Copper
22 as to how, where, or when to mine.”); *see also Cour D’Alene Tribe*, 280 F. Supp. 2d at 1129
23 (finding no operator status where the government lacked managerial control over the
24 mines, the mines and mills were not forced to produce but elected to aid the war effort and
25 participate in the government’s premium price plan, the mining companies owned the
26 equipment used in the mines and mills, the government set the price for the metals but did
27 not control who could purchase them, and the mining companies controlled the
28 mechanisms creating the tailings and disposal of the tailings).

1 The facts of this case are also distinguishable from cases where the United States
2 has been held liable as an operator. For example, in *FMC Corp. v United States*
3 *Department of Commerce*, 29 F. 3d 833 (3d Cir. 1994), the Third Circuit found the
4 government liable as an operator because it (1) required the facility to manufacture a certain
5 product, (2) controlled the supply and price of the raw materials, (3) supplied equipment
6 for use in the manufacturing process, (4) acted to ensure the facility retained an adequate
7 labor force, (5) participated in the management and supervision of the labor force, (6) had
8 authority to remove workers, and (7) controlled the price of the product and who could
9 purchase the product. *Id.* at 843. In this case, the United States had no oversight of mining
10 or labor activities at the Mine Sites, other than generic safety responsibilities, and did not
11 compel El Paso to mine for uranium. *See* Tr. at 1580; *Coeur D’Alene Tribe*, 280 F. Supp.
12 2d at 1130 (distinguishing *FMC* where the mining companies maintained actual control
13 over the mines and mills, hired and fired its owner employees, and voluntarily decided to
14 mine for metals and participate in the government’s premium plan).

15 In *Cadillac Fairview/California, Inc. v. Dow Chemical Co.*, 299 F. 3d 1019 (9th
16 Cir. 2002), the government owned the site, the pits, the plant, and all materials, including
17 the wastes, had unfettered control over Dow Chemical’s waste producing actions, and
18 made an express agreement to indemnify Dow Chemical. The United States in this case
19 did not exercise similar control and did not indemnify El Paso.

20 El Paso cites *MRP Properties, LLC v. United States*, 308 F. Supp. 3d 916 (E.D.
21 Mich. 2018), to argue that even the government’s passive or unintentional control of the
22 Mine Sites’ operations gives rise to operator liability. But *MRP Properties* involved a
23 motion to dismiss for failure to state a claim. The trial court assumed all facts alleged in
24 the complaint to be true and construed them in the plaintiff’s favor. *Id.* at 928. Those
25 allegations included an assertion that the United States “controlled day-to-day operations
26 at each refinery.” *Id.* The complaint also alleged that the government “oversaw” or
27 “dictated” the “amount and type of wastes generated and released at each refinery and
28 tracked these production loss statistics.” *Id.* at 929. In denying the motion to dismiss, the

1 *MRP* court noted that further factual development might disprove these allegations, stating
2 that “[a] key factual question in this case is whether and to what extent the Government’s
3 alleged control of inputs, outputs, conversion of facility operations, and constructions
4 projects, was specifically brought to bear on operations having to do with leakage or
5 disposal of hazardous waste.” *Id.* at 934. This case is different. The Court is making
6 factual findings on a full evidentiary record, not deciding a motion to dismiss. The Court
7 finds that the government did not manage, direct, or conduct disposal of hazardous waste
8 at the Mine Sites, and that El Paso freely chose to enter the uranium mining business and
9 contract with the United States. To the extent language in *MRP* can be read to suggest that
10 the passive possession of authority gives rise to operator liability, the Court finds it
11 inconsistent with the Supreme Court’s instruction that such liability “must be read to
12 contemplate ‘operation’ as including the *exercise* of direction over the facility’s activities.”
13 *Bestfoods*, 524 U.S. at 71 (emphasis added).

14 **3. Reclamation.**

15 El Paso argues that the United States is liable as an operator during the reclamation
16 phase at the Mine Sites. Doc. 187 at 11. El Paso asserts that federal agencies worked with
17 the Nation to plan and determine a “joint strategy” for reclaiming the sites. *Id.* Further,
18 the United States paid for the reclamation through funding under the SMCRA grant. Once
19 the reclamation strategy was in place, the OSM reviewed and approved the Nation’s plans
20 and oversaw the work. *Id.* Specifically, El Paso asserts that the United States approved
21 and oversaw the importation of off-site uranium-bearing material as cover on the
22 reclamation sites. *Id.* at 11-12.

23 The Court does not agree with El Paso’s factual assertions. As discussed above, a
24 division of the Navajo Nation – the NAML – created the reclamation’s guiding
25 specifications. *See* Ex. 198; Sassaman Depo. at 29-30, 35, 56, 74-76; Martinez Depo.
26 at 34-35. Once the plans were submitted for the SMCRA grant, the OSM provided
27 oversight to ensure that the plans were being performed pursuant to the grant. *See* Martinez
28 Depo. at 20-21. But management of the day-to-day reclamation activities and handling of

1 all reclamation subcontracts was performed by the Nation. *See* Tr. at 517-18. The OSM
2 employees responsible for overseeing the reclamation testified that their job was to make
3 sure the site existed, ensure that the work followed the Nation's reclamations standards,
4 and give suggestions where appropriate. *See* Martinez Depo. 34-36, 40, 41-43; Sassaman
5 Depo. 33-35, 106. The OSM employees were conscious of the fact that the Navajo Nation
6 was an independent sovereign that should be granted special deference. Sassaman Depo.
7 at 126-31.

8 El Paso's own expert, Mr. Beahm, acknowledged that the Navajo Nation took the
9 lead on reclamation. The Nation conducted an inventory of the Mine Sites in the 1980s
10 and decided in the early 1990s to reclaim 17 of the 19 sites (Tr. at 511); performed the
11 assessments for the reclamation projects (*id.* at 516); developed the technical specifications
12 for the projects (*id.*); selected the contractors who would do the work (*id.*); and performed
13 the day-to-day management of the projects (*id.* at 517-18).

14 El Paso argues that various federal government agencies participated in planning
15 the reclamation project. *See* Tr. at 516-17. But this was due to the overlap between the
16 EPA's authority to prioritize hazardous waste sites and the NAML's authority to reclaim
17 sites that present public health hazards. El Paso points to a letter from the EPA to the DOI
18 regarding a meeting among several federal agencies. *See* Ex. 198. But the letter indicates
19 that the NAML should continue to reclaim sites under SMCRA and develop reclamation
20 standards in conjunction with the Navajo Superfund Program ("NSP"). *Id.* Meanwhile,
21 the NSP should continue working with the EPA to identify sites that are not eligible for
22 SMCRA funding. *Id.*; *see also* Ex. 201 (letter stating that the NAML should continue
23 reclamation and SMCRA clean-up will be the most appropriate funding source). Thus, the
24 cooperation identified by El Paso resulted in substantial deference to tribal environmental
25 agencies and does not indicate that the federal government exercised control over
26 reclamation at the Mine Sites. The Court finds that the United States was not a CERCLA
27 operator with respect to reclamation.¹⁸

28 ¹⁸ El Paso's citation to *California Department of Toxic Substances Control v. Jim*

1 **B. Arranger Liability.**

2 El Paso argues that the United States was an arranger during all three phases of
 3 mining. An arranger is “any person who by contract, agreement, or otherwise arranged for
 4 disposal or treatment” of hazardous substances. 42 U.S.C. § 9607(a)(3). The Supreme
 5 Court has held that, “[i]n common parlance, the word ‘arrange’ implies action directed to
 6 a specific purpose.” *Burlington N. & Santa Fe Ry. Co. v. United States*, 556 U.S. 599, 611
 7 (2009). “Consequently, under the plain language of the statute, an entity may qualify as
 8 an arranger . . . when it takes intentional steps to dispose of a hazardous substance.” *Id.*
 9 Mere knowledge of possible disposal is not enough: “knowledge alone is insufficient to
 10 prove that an entity ‘planned for’ the disposal[.]” *Id.* at 612. A party must act “with the
 11 intention” that hazardous waste be disposed in the transaction in which the party is
 12 participating. *Id.*

13 El Paso’s argument regarding the government’s arranger liability largely overlaps
 14 its argument on operator liability. Both are based on essentially the same government
 15 activity. As a result, although the two forms of CERCLA liability differ, the Court’s ruling
 16 on arranger liability largely tracks its ruling on operator liability.

17 **1. Exploration Phase.**

18 El Paso argues that the AEC arranged for its primary contractor to perform rim
 19 stripping at the mine sites. Doc. 187 at 5. The Court has already held that the United States
 20 is an operator for purposes of the exploration activities at Huskon 12, 14, and 17. The
 21 Court concludes that government arranger liability has not been proved for the other Mine
 22 Sites, for reasons explained above, and that imposing arranger liability for Huskon 12, 14,
 23

24
 25 _____
 26 *Dobbas, Inc.*, No. 2:14-595 WBS EFB, 2014 WL 4627248 (E.D. Cal. Sept. 16, 2014), is
 27 not helpful. That case recognized, as this Court does, that whether a government is liable
 28 as a CERCLA operator of a facility “depends on whether it managed, directed, or
 conducted operations there.” *Id.* at *3. The district court addressed a motion to dismiss,
 accepted all allegations as true, construed the allegations in the light most favorable to the
 claiming party, and held only that a State’s issuance of several remedial action plans over
 a period of years “could plausibly constitute management or direction of operations there.”
Id. The case did not attempt to specify what level of involvement is necessary to trigger
 CERCLA liability and provides no guidance in this case.

1 and 17 would not change the Court's equitable allocation in this case. As a result, the Court
2 need not decide whether United States is an arranger for these three sites.

3 **2. Mining Phase.**

4 El Paso argues that the United States was an arranger during the mining phase
5 because of the Circulars' ore grade cut-off level. Doc. 187 at 7. El Paso asserts that this
6 level shows the United States intended mine operators to separate and leave behind low-
7 grade uranium-bearing materials. *Id.* at 8.

8 The Court agrees that the United States knew low-grade uranium-bearing material
9 would be left at the Mine Sites, although, as noted above, such a result was likely an
10 inevitable result of any mining process. But as the Supreme Court has made clear,
11 knowledge is not enough. The party must "take[] intentional steps to dispose of a
12 hazardous substance." *Burlington*, 556 U.S. at 611.

13 The evidence does not show that the United States took intentional steps to dispose
14 of waste at the Mine Sites during the mining phase. As already discussed, El Paso decided
15 what equipment to use, where to mine, how to mine, how to dispose of waste, and how
16 long to operate the mines. El Paso excavated the ore at the Mine Sites and created the
17 waste piles. The government's cut-off levels may have influenced what waste was left
18 behind, just as El Paso's higher mill cut-off level did, but such influence does not amount
19 to intentional action to dispose of hazardous materials.

20 **3. Reclamation Phase.**

21 El Paso asserts that federal agencies took a leading role in establishing the
22 reclamation strategy and approving grant applications, reclamation plans, and the
23 comingling of waste from mines operated by third parties. Doc. 187 at 13. According to
24 El Paso, these actions were intentional steps to arrange for the disposal of hazardous
25 substances that resulted from dispersal of waste piles, disturbance of native uranium-
26 bearing material, and the import of uranium-bearing material to the Mine Sites. *Id.*

27 As explained above, however, the Court does not find that the United States
28 controlled the reclamation work or set the reclamation standards. Its role in reclamation

1 was primarily as the source of reclamation funds. The Court cannot conclude that the
2 United States' general oversight and funding responsibilities amounted to "intentional
3 steps to dispose of a hazardous substance." *Burlington*, 556 U.S. at 611.

4 **4. Broader Arranger Liability.**

5 In *United States v. Shell Oil Co.*, 294 F.3d 1045 (9th Cir. 2002), which predated the
6 Supreme Court's decision in *Burlington*, the Ninth Circuit discussed what it characterized
7 as "broader arranger liability." *Id.* at 1055. The court addressed whether the United States
8 was subject to arranger liability for its actions in the production of aviation gas ("avgas")
9 during World War II.

10 "Because avgas was critical to the war effort, the United States government
11 exercised significant control over the means of its production during World War II." *Id.*
12 at 1049. The government established several agencies to oversee war-time production;
13 established a nationwide priority ranking system to identify scarce goods, prioritize their
14 use, and facilitate their production; made policy determinations regarding the construction
15 of new facilities and allocation of raw materials; had authority to issue production orders
16 to refineries; entered contracts to ensure avgas production; offered low-cost loans to
17 refineries to help finance the construction of avgas-producing plants; assisted refineries in
18 exchanging and blending various avgas components in order to maximize production;
19 directed that specific component exchanges be made; provided detailed instructions for
20 blending; directed refiners to blend avgas in a way that would allow increased overall
21 production; but did not exercise direct actual control over the production of avgas
22 components. *Id.* at 1049-50. The government knew avgas production generated acid
23 wastes and that increased avgas production increased acid waste generation, but it never
24 specifically ordered or approved the dumping of the spent acid that caused contamination.
25 *Id.* at 1051. In addressing the United States' arranger liability in light of these facts, the
26 Ninth Circuit considered four circuit court decisions.

27 One of the cases found arranger liability where the party owned hazardous
28 chemicals, arranged for their blending by another company, and knew that the blending

1 process generated and disposed of hazardous waste. *See United States v. Aceto Agric.*
2 *Chems. Corp.*, 872 F.2d 1373, 1381 (8th Cir.1989). The Ninth Circuit in *Shell Oil* found
3 that *Aceto* was not persuasive because, in the avgas case before it, the United States was
4 the end purchaser of avgas, never owned any of the raw materials or intervening products,
5 and did not contract out a crucial and waste-producing intermediate step in a manufacturing
6 process. 294 F.3d at 1056.

7 The second case imposed arranger liability on a company whose vice president
8 agreed with a third party to bury drums of chemical waste on a farm several miles from the
9 plant. *See United States v. Ne. Pharm. & Chem. Co.*, 810 F.2d 726 (8th Cir.1986). The
10 Ninth Circuit found the case inapplicable because the United States in its avgas operations
11 “did not exercise any actual control over the Oil Companies’ disposal of spent acid and
12 acid sludge[.]” 294 F.3d at 1057.

13 In the third case, the en banc Eighth Circuit split evenly on the question of whether
14 the United States was an arranger for its World War II involvement in rayon manufacturing.
15 The government vigorously sought to increase production of rayon during the war, installed
16 government-owned rayon-manufacturing equipment at a plant, ensured an adequate supply
17 of sulfuric acid for the plant, built and retained ownership of a new acid plant next door,
18 obtained draft deferments for workers at the plant, directly controlled the process by which
19 the rayon was manufactured, directly controlled the supply of the raw materials, and
20 directly controlled the price of the rayon produced. *See FMC Corp.*, 29 F.3d at 833. The
21 Ninth Circuit observed that “[i]f it was a close question on the facts of *FMC* whether the
22 United States was an arranger, it cannot possibly be a close question on the facts in the case
23 before us.” 294 F.3d at 1058.

24 Finally, *Shell Oil* considered another case where the Eighth Circuit held that the
25 United States was not an arranger in connection with the production of Agent Orange
26 during the Vietnam War. *See United States v. Vertac Chem. Corp.*, 46 F.3d 803 (8th Cir.
27 1995). The Ninth Circuit found the facts in *Vertac* comparable to the avgas facts before it
28

1 and concluded that the United States was not an arranger. The court provided this
2 comparison between the avgas and Agent Orange facts:

3 In both cases, products were manufactured for purchase by the United States
4 in war-time; in both cases, the manufacturing was carried out under
5 government contracts and pursuant to government programs that gave it
6 priority over other manufacturing; in both cases, the companies voluntarily
7 entered into the contracts and profited from the sale; and in both cases, the
8 United States was aware that waste was being produced, but did not direct
9 the manner in which the companies disposed of it.

10 294 F.3d at 1059.

11 These facts – recited from *Shell Oil* and *Vertac* – closely parallel the facts in this
12 case. Uranium ore was mined for purchase by the United States in war-time; the mining
13 was carried out under government-approved permits and leases and pursuant to a
14 government program that sought to encourage domestic uranium production; El Paso
15 voluntarily entered into the mining and profited from both mining and milling; and “the
16 United States was aware that waste was being produced, but did not direct the manner in
17 which the [El Paso] disposed of it.” *Id.* The Ninth Circuit held in *Shell Oil* that the United
18 States was not an arranger, a holding which makes clear that the government is not an
19 arranger in this case, even under the “broader arranger theory.” *See Coeur D’Alene Tribe*,
20 280 F. Supp. 2d at 1132 (“The *Shell [Oil]* court determined that mere ‘authority to control’
21 was insufficient without some actual exercise of control.”).¹⁹

22 **5. El Paso Arranger Liability.**

23 The United States argues that El Paso should be liable as an arranger because it
24 exercised actual control over all aspects of the mining operations, including disposal of
25

26 ¹⁹ As part of its argument for arranger liability of the United States, El Paso cites an
27 Arizona case from 1914 and a Ninth Circuit case from 1908 for the proposition that waste
28 rock at the Mine Sites always belonged to the United States because, although it was
moved, there was never an intent to sever it from the realty. Doc. 187 at 10. But El Paso
does not explain why these cases apply to land on the Navajo Nation Reservation, and the
Court notes that at least one more recent case has rejected this legal principle for federal
lands. *See Chevron Mining Inc. v. United States*, 863 F.3d 1261, 1283 (10th Cir. 2017)
 (“The United States neither owned nor possessed the waste rock and tailings extracted from
Chevron’s molybdenum mining activities.”). El Paso’s argument does not alter the Court’s
conclusion that the United States was not a CERCLA arranger during the mining phase.

1 mining waste at the Mine Sites. *See* Docs. 186 at 3; 157 at 80-82 ¶¶ 62. El Paso has already
2 conceded its operator liability, which encompasses control over waste-generating
3 activities. The Court concludes that imposing arranger liability for the same actions would
4 not change the Court's equitable allocation in this case. As a result, the Court need not
5 decide whether El Paso is an arranger

6 **III. Equitable Allocation.**

7 The Court may allocate response costs among liable parties using such equitable
8 factors as the Court determines are appropriate. 42 U.S.C. § 9613(f)(1). The liability of a
9 responsible person under § 113(f) corresponds to that party's equitable share of the total
10 liability. *Fireman's Funds Ins. v. City of Lodi, Cal.*, 302 F.3d 928, 945 (9th Cir. 2002).

11 **A. El Paso's Proposed Allocation.**

12 El Paso suggests that the Court allocate responsibility for all past and future
13 response costs by (1) creating three categories or buckets, one for exploration, one for
14 mining, and one for reclamation; (2) assigning a percentage of overall site responsibility to
15 each of these three buckets based on the volume of soil moved during each phase;
16 (3) allocating the portion within each bucket between El Paso and the United States; and
17 (4) adding the percentage allocated to each party in each of the three buckets to arrive at
18 the overall allocation. Using this model, El Paso's proposed allocation assigns 86.77% of
19 the liability for the Mine Sites to the United States, and 13.23% to El Paso. The Court
20 disagrees both with the percentage of site responsibility El Paso assigns to each of its
21 proposed buckets and with its suggested allocation within each bucket.

22 **1. El Paso's Percentage Division Among Buckets.**

23 El Paso's three-bucket approach was developed by its allocation expert, David
24 Batson. He allocated a percentage of overall site responsibility to each bucket by adopting
25 Mr. Beahm's estimates of the amount of soil moved during each of the three phases of
26 mining. Tr. at 735-36. The Court finds this approach seriously flawed.

27 During the exploration phase, Mr. Beahm estimated that 132,000 cubic yards of soil
28 was moved, amounting to about 7% of all soil moved during the exploration, mining, and

1 reclamation phases. Mr. Batson therefore assigned 7% of the overall responsibility for
2 response costs to the exploration bucket. Mr. Beahm reached this 7% calculation by
3 relying on the 45,000 linear feet of trenching he attributes to the 45-day AEC exploration
4 window. As explained above, however, the Court cannot accept Mr. Beahm's conclusion
5 that 45,000 feet of trenching was done at the Mine Sites in late 1953 and early 1954 when
6 it is not shown on the 1954 aerial photographs, nor that all of it was done by the AEC. The
7 Court has little confidence in Mr. Beahm's conclusion about the amount of soil moved
8 during the exploration phase, and therefore in Mr. Batson's assignment of 7% of the overall
9 site responsibility to the first bucket.

10 The size of the second bucket – 59% of overall site responsibility – is based on Mr.
11 Beahm's calculation of the amount of soil moved and left at the site during the mining
12 phase. He calculated that amount by estimating the volume of the mine pit at each site,
13 subtracting from that volume the amount of ore sold from the site, and increasing the result
14 by 20% to reflect the fact that soil expands after it is removed from the ground. Tr.
15 at 418-19. But this calculation assumes that the only soil El Paso moved at the Mine Sites
16 was the soil that came from within the walls of the pits as they appeared when Mr. Beahm
17 visited the site decades later or in aerial photographs taken before reclamation by the
18 Navajo Nation. The calculation fails to account for soil moved by El Paso at the Mine
19 Sites to excavate overburden down to where the pit mining actually started; to clear ground
20 for mine structures, ore piles, ore blending, and waste piles; to build ramps into and out of
21 mine pits; and to build roads around and into the Mine Sites. See Tr. at 1500-01.

22 The amount assigned by El Paso to the third bucket – 34% – is based on Mr.
23 Beahm's estimate of the amount of new soil moved during reclamation. Mr. Beahm noted
24 that the volume of soil moved during reclamation was higher than his calculated volume
25 for mining. Tr. at 413-17. He subtracted his mining volume from the reclamation volume
26 and arrived at 643,308 cubic yards of soil that he claims was moved for the first time during
27 reclamation. Tr. at 1396. He explains this additional soil movement by assuming that the
28 Nation's reclamation contractors moved more soil than necessary when reclaiming waste

1 piles. Tr. at 420. He asserts that they likely dug into the soft undisturbed dirt when moving
 2 the waste piles. Tr. at 477-78. He also notes that soil was brought from off-site to complete
 3 the reclamation. Tr. at 479-80. The Court views this reclamation calculation as unreliable
 4 because it relies on Mr. Beahm's mining volume, which the Court finds unreliable for
 5 reasons stated above. The Court also has difficulty with the implicit assumption that the
 6 movement of additional soil in reclamation was unnecessary – that reclamation could have
 7 been accomplished by moving no more soil than was originally disturbed during mining.
 8 No evidence was presented to support this assumption, and yet it is the basis for the third
 9 bucket, which is a percentage of site costs independent of mining and exploration activities
 10 that El Paso claims should be assigned to somebody. If the movement of additional soil
 11 was a necessary part of reclaiming the Mine Sites, then it could be considered a product of
 12 mining and allocated in accordance with the mining allocation. The Court cannot agree
 13 that it should be treated as a separate percentage of the overall site costs to be allocated
 14 without regard to mining activities, as El Paso proposes.

15 **2. El Paso's Allocation Within Each Bucket.**

16 The Court also disagrees with how El Paso's allocates responsibility within each
 17 bucket. The first bucket represents 7% of the overall response cost liability, and El Paso
 18 allocates 70% of it to the United States and 30% to itself. This allocation assumes that the
 19 AEC did all of the exploration at the 12 Huskon Mine Sites accounted for in this bucket
 20 and during the 45-day window. Tr. at 735.²⁰ As noted above, the Court does not find this
 21 position credible. The Court finds that the United States engaged in exploration activities
 22 at Huskon 12, 14, and 17, considerably less than all of the exploration activities that
 23 occurred at the 12 Huskon Mine Sites in El Paso's proposed first bucket.

24 For the second bucket – the mining phase – Mr. Batson starts with an allocation of
 25 two-thirds liability to the United States as landlord, active owner of the land, and arranger
 26 for the disposal of the hazardous substances, and one-third to El Paso as an operator that

27
 28 ²⁰ Initially, Mr. Batson noted 15 Huskon sites, but he scaled this back to 12 sites,
 omitting Huskon 5, 6 and 9, the three sites where El Paso decided not to seek contribution
 for the exploration phase. *See* Tr. at 752.

1 conducted mining activities. Tr. at 738. From this largely unexplained baseline, Mr.
2 Batson considers the impact of four equitable factors: (1) the benefits received by each
3 party, (2) the degree of knowledge regarding the risks of the contamination, (3) the degree
4 of cooperation by the parties, and (4) the degree of control and care exercised by each party
5 in relation to knowledge. Tr. at 739. Based on these factors, Mr. Batson recommends
6 increasing the United States' share by ten percent (Tr. at 741), although he does not explain
7 how he arrived at this specific amount. He also assigns the United States the orphan shares
8 for Huskon 4, 5, 8, and 9. Tr. at 745. When all of his second-bucket allocation is
9 completed, Mr. Batson assigns 81% of the second bucket to the United States and 19% to
10 El Paso. Tr. at 746.

11 The Court disagrees with Mr. Batson's baseline. The period represented by the
12 second bucket was the primary waste-generating phase at the Mine Sites – years when the
13 mines were in operation and creating waste piles. El Paso was the key actor in these
14 operations. As will be clearer from the Court's allocation discussion below, the Court can
15 see no justification for assigning the United States a supermajority of liability for mining
16 operations El Paso performed.

17 In the third bucket, Mr. Batson assigns 100% of the liability to the United States as
18 the only operator during the reclamation phase. Tr. at 746. His assessment is based on El
19 Paso's view that the Nation's reclamation created additional waste by moving too much
20 soil and by moving in radioactive material from off-site. *See* Tr. at 860-61.

21 The Court's first disagreement is that the United States is not an operator during this
22 phase, as explained above. The Court also finds that the reclamation projects most likely
23 will decrease, rather than increase, the ultimate clean-up costs at the Mine Sites. El Paso
24 has evaluated possible remedies in draft RSEs and EE/CAs for Huskon 12 and 14. *See* Tr.
25 at 677. These represent two of the most contaminated Mine Sites, and yet three of the four
26 remedies proposed by El Paso involve no excavation of the mine pits where wastes were
27 placed during reclamation. Nor does El Paso propose that entirely new caps be placed on
28 the mounds now found where the mine pits once were located. Instead, El Paso proposes

1 that it enhance and maintain the reclamation work performed by the NAML. *See* Ex. 285
2 at 11-13.

3 Although the EPA has not responded to El Paso's proposal, it appears likely that El
4 Paso will not be required to excavate the mine pits and move contaminated soil off-site to
5 other locations, particularly given the arid and still-remote positions of the Mine Sites.²¹
6 The Court finds it more likely that El Paso will be required to upgrade caps on the waste
7 piles and improve storm-water run-off and erosion protection systems. It may also be
8 required to address contamination in drainages and other areas that were not addressed in
9 the reclamation work. If this is true, the excavation of waste piles and filling of mine pits
10 performed by the Navajo Nation during reclamation most likely will have reduced, not
11 increased, the response costs at the Mine Sites.

12 Mr. Werth, El Paso's remediation project manager, testified that the reclamation
13 work will increase remediation costs, but the Court did not find this testimony credible.
14 He suggested that areas on the Mine Sites with the highest gamma readings were in
15 locations that have not been reclaimed, suggesting that reclamation lowered radiation
16 levels. *Tr.* at 624-25. He testified that erosion of the reclamation mounds will increase
17 remediation costs (*see Tr.* at 621), but there is evidence that the mine sites were eroding
18 prior to the reclamation work (Ex. 189). The Court cannot find that erosion of the capped
19 waste mounds created during reclamation has caused more contamination than would have
20 been caused by erosion of uncovered waste piles left at the sites by El Paso.

21 Nor did El Paso persuasively show that reclamation made the sites worse by
22 bringing in radioactive fill material from other sites. Mr. Beahm did testify that soil was
23 brought from other locations to provide cover at the Mine Sites, and that some of these
24 locations were other uranium mines. *Tr.* at 460-63, 516-17. But he did not testify that the
25 material brought to the Mine Sites was contaminated. He noted that the radiation level
26 used by the Nation in reclamation was 25 picocuries per gram, implying that materials near
27

28 ²¹ El Paso itself asserts that excavation of the filled mine pits today would not allow
it to segregate the mixed waste for separate remediation treatment. *Tr.* at 474.

1 this level could have been imported for cover, but he did not testify that this actually
2 occurred. *Id.* El Paso provides a long string cite of various exhibits and deposition pages
3 to support its position (Doc. 187 at 11-12), but none of the cited evidence shows that
4 contaminated material was brought onto the Mine Sites during reclamation. To the
5 contrary, at least one historical document states that the imported material was “clean.”
6 Ex. 224. The Court accordingly does not find that reclamation made the sites more
7 contaminated as El Paso asserts.

8 To summarize, the Court finds El Paso’s proposed allocation to be quite unreliable
9 – contrived to assign maximum responsibility to the United States.

10 **B. The United States’ Proposed Allocation.**

11 The government’s allocation expert, Mr. Low, did not present a framework similar
12 to Mr. Batson’s. He instead opined that the United States’ trust ownership of the land
13 should reduce the costs allocated to it. Tr. at 1298. And he emphasized involvement of
14 the parties, benefits to the parties, and cooperation as the three main factors for the Court
15 to consider. Tr. at 1302-08. Mr. Low opined that the equitable share for the United States
16 in this case should not exceed 25%, but he did not fully explain how he applied his equitable
17 factors to reach this proposed limit. The Court does not find his allocation analysis helpful.

18 **C. The Court’s Allocation.**

19 In apportioning response costs among responsible parties, CERCLA requires only
20 that the Court use “such equitable factors as the court determines are appropriate.”
21 42 U.S.C. 9613(f)(1). Courts often start allocation analysis with the Gore factors originally
22 contained in a bill proposed by then-Congressman Al Gore. *See Burlington*, 520 F.3d
23 at 940 n.26. These include (1) the ability of the parties to demonstrate that their
24 contribution to a discharge, release or disposal of a hazardous waste can be distinguished;
25 (2) the amount of the hazardous waste involved; (3) the degree of toxicity of the hazardous
26 waste; (4) the degree of involvement by the parties in the generation, transportation,
27 treatment, storage, or disposal of the hazardous waste; (5) the degree of care exercised by
28 the parties with respect to the hazardous waste, taking into account the characteristics of

1 such hazardous waste; and (6) the degree of cooperation by the parties with federal, state,
 2 or local officials to prevent any harm to the public health or the environment. *See TDY*
 3 *Holdings, LLC v. United States*, 885 F.3d 1142, 1146 (9th Cir. 2018). Courts also consider
 4 (1) the extent to which the clean-up costs are attributable to wastes for which a party is
 5 responsible; (2) the party's level of culpability; (3) the degree to which the party benefitted
 6 from disposal of the waste; and (4) the party's ability to pay its share of the costs. *United*
 7 *States v. Davis*, 31 F. Supp. 2d 45, 63 (D.R.I 1998). The Court will consider all of these
 8 factors.

9 **1. Gore Factors.**

10 **a. Distinguishability of Each Party's Waste.**

11 There is only one type of waste at issue in this case – radioactive remnants of
 12 uranium mining. Both parties claim the other is partially responsible for this single form
 13 of waste. The Court cannot accept El Paso's three-bucket approach for reasons explained
 14 above, and finds no other reasonable basis for distinguishing one party's waste from the
 15 other's.

16 **b. Amount of Hazardous Waste.**

17 The Court cannot identify a volume of hazardous waste that can be neatly attributed
 18 to one party and not the other. The fight is over waste that has not been quantified. As
 19 noted, the Court does not agree with El Paso's attempt to estimate a soil volume attributable
 20 to each of the parties.

21 **c. Degree of Toxicity.**

22 With only one type of contaminant blended in the soil throughout the Mine Sites,
 23 this factor is not relevant. *See Gavora, Inc. v. City of Fairbanks*, No. 4:15-cv-00015-SLG,
 24 2017 WL 3161626, at *8 (D. Alaska July 25, 2017) (noting that this factor is most relevant
 25 when there are two types of discharges by two distinct actors, and one is more toxic).

26 **d. The Degree of Involvement.**

27 This is the most important factor in this case. El Paso, as the Mine Sites' operator,
 28 was the primary party responsible for the generation and disposal of waste at the sites. El

1 Paso excavated uranium ore in open pit mines, stockpiled ore on the property, and
2 stockpiled waste on the property. El Paso also built and operated the Tuba City mill, which
3 purchased uranium from its own mines and others in the area.

4 The United States did not directly oversee El Paso's mining operations or instruct it
5 on where or how to dispose of waste. But the United States did own the land in trust for
6 the Navajo Nation and was obligated to hold it for the best interests of the Nation. In this
7 capacity, the United States reviewed and approved permits and leases, included various
8 oversight powers in the permits and leases, advised the Nation on its uranium regulation
9 activities, and collected rents and royalties for the Nation's benefit. The Court concludes
10 that the United States should be assessed a 5% share for these ownership activities.

11 But this assessment does not fully account for the government's substantial
12 involvement in this case. The United States did much more than simply act in its trust
13 capacity for the Nation's benefit. It created the DUPP to obtain uranium and further the
14 national defense. It created the market for uranium by publishing the Circulars and
15 establishing buying stations. It encouraged uranium mining throughout the United States
16 and in the Cameron area by researching best exploration and mining practices and engaging
17 in exploration and road-building. It was the only purchaser of uranium ore, and it reviewed
18 and approved El Paso's construction and operation of the Tuba City mill. Charlie's Steen's
19 million-dollar discovery may have sparked the uranium "gold rush" in the minds of the
20 public (Tr. at 1600), but the United States played a primary role in the creation and growth
21 of uranium mining in the 1950s, including at the Mine Sites.

22 How, then, does the Court balance the parties' respective roles – El Paso's for-profit,
23 on-the-ground, excavation and disposal of the uranium waste that must now be remediated,
24 together with its operation of the mill that created a local uranium purchaser for its mines
25 and others, versus the government's role in promoting, facilitating, and assisting in uranium
26 mine development generally and its exploration of some of the Mine Sites?

27 The Court begins by noting that El Paso was directly involved in every step of waste
28 generation. With the exception of the relatively small orphan shares that will be assigned

1 below, El Paso moved every cubic foot of radioactive soil that has created an environmental
2 hazard at the sites. It opened the mines, hired the workers, acquired the machinery,
3 excavated the soil, created the waste and ore piles, loaded the trucks, and blended the ore.
4 It decided how long to operate each mine, how much soil to disturb, and, within the limits
5 of the mines' capacities, how much ore to produce. It built and operated the mill that made
6 the Cameron area mines, including its own mines, more profitable. It set the ore grade cut-
7 off at the mill that determined what levels of waste would be left at mines. In short, El
8 Paso was the principal actor, the primarily responsible party for generating the waste at
9 issue in this case. El Paso was not dragooned by the United States into this activity. Like
10 many others drawn to uranium mining in the 1950s and 1960s, it sought to make a profit
11 and dutifully reported its mining profits to management and shareholders each year.

12 The United States, by contrast, was not an on-site actor in the waste generating or
13 disposal activities. With the exception of some exploration work at Huskon 12, 14, and 17
14 in the early years, it had no direct involvement in the mining or waste generation. It did,
15 to be sure, exert influence over those operations. It created financial incentives, promoted
16 uranium mining on the Colorado Plateau, approved construction of the mill, and purchased
17 uranium ore and concentrate.

18 Comparing these two parties, the Court concludes that El Paso was the primary actor
19 but that the United States should bear some meaningful share of the responsibility.
20 Therefore, in addition to the 5% that the Court has assigned the United States for its trust
21 ownership of the land and the actions it took to oversee and approve permits and leases,
22 the Court assigns 25% to the United States for creating the conditions and market that led
23 to mining at the Mine Sites, and for its limited exploration at three sites. The Court assigns
24 70% to El Paso for its role as the primary generator of the contamination – an amount that
25 will be adjusted slightly when the Court considers the relative benefits to the parties.

26 **e. Degree of Cooperation.**

27 This factor does not tip the balance either way. Both parties have been appropriately
28 responsive to their environmental responsibilities.

1 El Paso left the Mine Sites exactly how the Navajo Nation and the United States
 2 requested. The government approved termination of the leases and returned El Paso's
 3 bonds. *See* Tr. at 383; Ex. 172. Leases required El Paso to leave the Mine Sites timbered,
 4 which for pit mining meant leaving the pits open. In the years that followed, El Paso had
 5 no interest in or responsibility for the Mine Sites, nor has the United States produced
 6 evidence that El Paso was asked to participate in the reclamation. Since El Paso received
 7 a PRP notice from the EPA, it has been compliant. *See* Tr. at 610-11. El Paso appears to
 8 have done everything the EPA has asked, on schedules agreed to by the EPA.²²

9 El Paso asserts that the United States and the Navajo Nation left the Mine Sites
 10 unattended from 1962 to the 1990s, allowing erosion and other health hazards to continue
 11 and increase. *See* Tr. at 746-47. But in response to concerns about public health and the
 12 state of the Mine Sites, the United States funded the Navajo Nation's reclamation through
 13 a SMCRA grant of \$2.4 million. The reclamation significantly mitigated immediate health
 14 hazards and likely reduced not only the continuing spread of radioactive material through
 15 erosion, but also the ultimate remediation costs as noted above.

16 **f. The Degree of Care.**

17 There is no evidence El Paso mined inappropriately or disposed of waste outside of
 18 its lease provisions or the customs of the 1950s and 1960s. Similarly, there is no evidence
 19 that the United States acted irresponsibly in operating the DUPP or in its involvement with
 20 uranium mines. This factor does not affect the Court's allocation.

21 **2. Other Factors.**

22 **a. The Relative Benefits to the Parties.**

23 Courts may consider both financial and non-monetary benefits when considering
 24 the degree to which parties benefited. *See, e.g., Cadillac Fairveiw*, 299 F.3d at 1026
 25 (World War II rubber production); *Shell Oil Co.*, 294 F.3d at 1060 (aviation gasoline as
 26

27 ²² The Court cannot accept the United States' argument that El Paso should have
 28 done more after the *Neztsosie* tort litigation. *See* Tr. at 1474. The parties presented no
 evidence of the litigation's outcome or of any right El Paso had to access or control the
 Mine Sites at the time.

1 part of the war effort). The clear benefit to El Paso was the profits it received from the
2 mining activities. Tr. at 1056-58; Exs. 1032-1056.

3 For the United States, the benefit was of a different kind. The threat of nuclear war
4 was real when the government started the DUPP. Uranium ore from the Colorado Plateau
5 was considered vital to the Country's national security, and the federal government needed
6 private companies with experience in mining. The Cold War effort ultimately succeeded;
7 the United States obtained enough uranium and produced enough weapons to maintain
8 security during the Cold War.

9 In assessing the benefit to the United States from domestic uranium production,
10 however, the Court cannot ignore the relatively small portion of government uranium needs
11 that was filled by the Cameron area mines. In 1961, all of Arizona provided only 3.2% of
12 the uranium ore produced in the United States (Ex. 1331), a percentage comparable to other
13 years (Tr. at 918-19). Mr. Beahm testified that production from the Cameron mines was a
14 "tiny" portion of domestic output. Tr. at 498; *see also* Exs. 1072 at 8; 1330; 1331. Indeed,
15 he testified that a single mine in Wyoming produced more uranium ore in one year than all
16 of the mines in the Cameron area produced during their entire lives. Tr. at 497.

17 Thus, although the benefit to the United States from overall uranium procurement
18 was substantial, the Mine Sites contributed only a small portion of that benefit. The Court
19 will assign an additional 5% to the United States for this factor, raising its total allocation
20 to 35%, with 65% for El Paso.

21 **b. Tuba City Mill Remediation.**

22 The United States asserts that it should be credited for money spent on the Tuba
23 City mill remediation. The Court does not agree. As discussed above, when El Paso closed
24 the mill it followed the procedures of the Arizona AEC and instructions from the BOM.
25 When it enacted UMCTRA, Congress opted not to impose liability on mill operators and
26 instead assumed responsibility for mills used in the uranium procurement program. Given
27 this conscious choice by Congress, it would be improper to use CERCLA to shift mill
28 clean-up costs to El Paso.

1 **c. Degree of Knowledge and Risk.**

2 Both parties knew of and understood the risks associated with uranium mining in
3 the 1950s and 1960s. Both employed geologists and mining experts. The Court cannot
4 conclude that one party had more knowledge than the other.

5 **d. Orphan Share.**

6 The orphan shares in this case arise from the operations of defunct mining
7 companies – Utco Uranium, Cameron Mining, B.C. Associates, Domino Company, and
8 H.R. Rodgers. El Paso proposes that the Court assign nine sites to Rare Metals, where
9 Rare Metals ceased operations prior to the ultimate closure of those sites, and the remaining
10 sites to the United States because it owned the land and had more connections with the
11 other orphan companies. Tr. at 744-45. But El Paso’s proposed assignment of 100% of
12 the remainder to the United States ignores El Paso’s continued relationship with the mines
13 through its operation of the Tuba City mill, which facilitated their mining and profited from
14 their ore production. See Tr. at 1335-36, 1478. The Court concludes that a pro rata
15 allocation of the orphan shares is more equitable.

16 **3. Supporting Case Law.**

17 The Court arrives at the 35%–65% allocation based on the factors considered above.
18 The Court has also considered a number of other cases that have engaged in CERCLA
19 allocations and finds that they support this division of responsibility.

20 **a. Newmont USA Ltd.**

21 The most relevant case is *United States v. Newmont USA Ltd.*, No. CV-05-020-JLQ,
22 2008 WL 4621566 (E.D. Wash. Oct. 17, 2008), which concerned the relative CERCLA
23 liabilities of the United States and two mining companies for an open pit uranium mine
24 operated during the 1950s, 1960s, and 1970s on land held in trust by the United States for
25 the Spokane Indian Tribe. *Id.* at *1. The involvement of the United States in *Newmont*
26 was even greater than its involvement in this case.

27 Leases for the Newmont mine site were executed and approved by DOI, as were
28 later assignments of the leases. *Id.* at *4. The AEC engaged in exploratory drilling at the

1 mine site, executed a series of small ore procurement contracts with the mining companies,
2 performed geologic surveying, provided free testing and assaying, guaranteed minimum
3 ore prices through the Circulars, and was the only purchaser of uranium when the mine
4 was opened. *Id.* at *8-9. As here, the companies elected to construct a mill for the uranium
5 ore, and the AEC executed a contract for the production and sale of uranium concentrate.
6 *Id.* at *10. Once the mill was operational, the AEC inspected it regularly, and the USGS
7 inspected the mine. *Id.* at *13. The AEC entered into additional contracts with the mining
8 companies, and DOI prepared and entered into renewed leases. *Id.* at *13-14. The leases
9 included obligations to the United States, not to the Spokane Tribe, allowed DOI to audit
10 the mining companies' records, empowered DOI to suspend operations, and provided for
11 payment of rents and royalties to the BIA for the benefit of the Tribe. *Id.* at *14. Following
12 a short closure of the mine while prices would not support a profitable operation, mining
13 resumed and uranium was sold to various private electric utilities. *Id.* at *16. Various
14 federal agencies, including the BIA and USGS, resumed their inspections of the mine. *Id.*
15 The DOI approved revised royalty agreements between the mining companies and the
16 Tribe, and the USGS was extensively involved in various reclamation and mitigation
17 activities at the mine. *Id.* at *17-21.

18 In addition to this direct involvement with the mine and the mill, the *Newmont* court
19 found that the mine's "uranium production provided the United States with a significant,
20 material benefit by supplying uranium for the nation's nuclear weapon and energy needs
21 during the Cold War." *Id.* at *43. The *Newmont* court also found that "[w]ithout the
22 encouragement and direct involvement of the United States, the Mine would not and could
23 not have been developed in the 1950s and 60s." *Id.* at *44.

24 *Newmont* assigned one-third of the CERCLA liability to the United States and two-
25 thirds to the mining companies. The district court found that the government knew of the
26 inherent environmental problems associated with open pit mining and that uranium
27 production provided the United States with a vital national benefit for the Cold War and
28 commercial nuclear power. Additionally, the United States had authority to inspect the

1 mining operations, monitor water quality, control rents and royalties, conduct audits, and
 2 set the amount of the reclamation bond. *Id.* at *60-61. *Newmont* assigned two-thirds of
 3 the CERCLA liability to the mining companies because they “conducted the mining
 4 activities that have caused the environmental problems that are now being addressed by
 5 EPA.” *Id.* at *61. The companies also “sought to profit financially and did profit from the
 6 operation,” and “demonstrated [a] lack of care and recalcitrance in reclaiming the mine
 7 site.” *Id.*

8 The Court finds that *Newmont* corroborates the 35% allocation to the government
 9 in this case. On very similar facts, the United States was assigned one-third of the
 10 CERCLA responsibility. Although it is true that the mining companies in *Newmont* were
 11 recalcitrant in their environmental responsibilities and El Paso is not, the United States also
 12 had greater involvement with the mine than here. *See* Tr. at 1312 (Mr. Low testifying that
 13 there was much more government oversight at the Newmont mine).²³

14 **b. Lockheed Martin Corp.**

15 Lockheed Martin filed suit against the United States seeking contribution under
 16 CERCLA for clean-up of three solid propellant rocket production facilities. *See Lockheed*
 17 *Martin Corp. v. United States*, 35 F. Supp. 3d 92, 96 (D.D.C. 2014). Both parties admitted
 18 PRP status, and the court held a bench trial. *Id.* The Court allocated the costs across three
 19 facilities, giving 19 to 29% to the United States and 71 to 81% to Lockheed Martin. *Id.*

20 Lockheed Martin researched, developed, and operated the sites in support of
 21 military and scientific programs critical to the Cold War. *Id.* at 98. The United States, as
 22 the only purchaser of the solid propellant rockets, controlled the solid propellant industry.
 23 *Id.* at 99. The government set the specifications for the propellant rocket motors, but
 24 otherwise had limited involvement in Lockheed’s technical development process. *Id.*

25
 26 ²³ El Paso argues that the United States’ share was reduced in *Newmont* because the
 27 mine produced only 11% of the AEC’s total uranium input, while here the AEC purchased
 28 100% of the Mine Sites’ uranium. These two numbers are not comparable. One represents
 input to the AEC’s program and the other represents what AEC purchased from particular
 mines. If the Court were to compare input to the AEC, all Arizona mines provided only
 3.2%, with the Mine Sites providing even less. *See* Ex. 1331.

1 at 102. Because Lockheed Martin was the sole operator of the sites, the court found that it
 2 should shoulder a larger portion of the liability for response costs. *Id.* at 150.

3 **c. TDY Holdings.**

4 TDY Holdings, LLC and its predecessor, Ryan Aeronautical Company (collectively
 5 “TDY”), filed a claim against the United States for equitable allocation of the costs TDY
 6 incurred cleaning up hazardous wastes at an aeronautical manufacturing plant. *See TDY*
 7 *Holdings, LLC v. United States*, No. 07-CV-787-CAB-BGS, 2019 WL 1012001, at *1
 8 (S.D. Cal., Mar. 1, 2019). Contamination at the site was caused by the sole operator, TDY,
 9 and there was no evidence that operational or disposal decisions were made by the
 10 government. *Id.* at *5. The government required that chromium be used in the
 11 manufacturing process, and the court accordingly allocated 5% of the soil remediation costs
 12 to it. *Id.* The court also allocated 10% of the ground clean-up costs to the government
 13 because it recommended that chlorinated solvents be discharged to a sewer line. *Id.*

14 **d. Cadillac Fairview.**

15 *Cadillac Fairview* involved allocation of clean-up costs associated with a synthetic
 16 rubber facility operated by Dow Chemical during World War II. 299 F.3d at 1022. At the
 17 time, the need for synthetic rubber was so urgent that the government had Dow Chemical
 18 build the plant and operate it as “an agent” of the government at the “expense and risk” of
 19 the government. *Id.* The government was found liable as an owner, operator, and arranger.
 20 *Id.* at 1025. Because of its agency relationship and express agreement to hold Dow
 21 Chemical harmless, the district court allocated 100% of the response costs to the
 22 government. *Id.* at 1026.

23 **e. Shell Oil Co.**

24 As noted above, *Shell Oil* involved the clean-up of a site contaminated with waste
 25 from the production of aviation fuel during World War II. 294 F.3d at 1048. The district
 26 court allocated 100% of the liability for remediation of the benzol waste to the United
 27 States. *Id.* at 1059. The district court found that the clean-up costs for such wastes were
 28 part of the war effort for which the American public should pay. *Id.* at 1060. Additionally,

1 the United States refused to make tank cars available for transporting the waste and refused
2 to allocate resources to build reprocessing plants, resulting in the contamination. *Id.*

3 **f. Other Cases Conclusion.**

4 This case is most similar to *Newmont*, which involved uranium mining, tribal-land
5 ownership, the DUPP, and benefits to the United States. The government exercised more
6 day-to-day oversight of the mines in *Newmont* than here, but the companies were less
7 cooperative in the environmental clean-up. *See* 2008 WL 4621566, at *44. The Court's
8 allocation in this case seems appropriately similar to *Newmont's*.

9 *Lockheed Martin* also presents a similar situation, where the government was not an
10 operator despite setting requirements for the final products. Assigning El Paso the majority
11 of the allocation due to its primary operator status aligns with *Lockheed Martin*.

12 This case is distinguishable from *Cadillac Fairview* and *TDY*. In *Cadillac Fairview*,
13 the private operator was an agent of and held harmless by the government. *TDY* involved
14 the discharge of multiple substances, only some of which could be attributed to the
15 government's products or requests.

16 The allocation in *Shell Oil* clearly differs from the allocation here. After a full trial,
17 the district court found that "had the future CERCLA regime been foreseen by the parties,
18 the Government would have agreed to pay for the costs of the cleanup of the McColl Site
19 (or any other unforeseen cost) in the blink of an eye[.]" 294 F.3d at 1060. The district
20 court also found that government decisions about tank cars and reprocessing plants resulted
21 in disposal of the waste and the present contamination. *Id.* The Court does not make the
22 same findings here, and therefore finds the allocation in *Shell Oil* distinguishable.

23 **IV. Application of § 107(n).**

24 CERCLA provides that "[t]he liability of a fiduciary under any provision of this
25 chapter for the release or threatened release of a hazardous substance at, from, or in
26 connection with a vessel or facility held in a fiduciary capacity shall not exceed the assets
27 held in the fiduciary capacity." 42 U.S.C. § 9607(n)(1). The United States argues that this
28 provision limits its liability because it owns the Mine Sites in trust for the Navajo Nation.

1 El Paso does not dispute that the government acted as a fiduciary with respect to the Nation
2 and the land ownership.

3 Section 107(n) does not eliminate CERCLA liability. Rather, it states that if a
4 fiduciary becomes liable under one of CERCLA's four categories, the assets from which
5 that liability can be satisfied are limited. "The liability of a fiduciary under any provision
6 of this chapter . . . shall not exceed the assets held in the fiduciary capacity." *Id.*
7 Consequently, when a party faces CERCLA liability for actions taken as a fiduciary –
8 usually land ownership – the party is not personally liable and the CERCLA recovery may
9 come only from assets held in the fiduciary capacity. *Canadyne-Georgia Corp. v.*
10 *NationsBank, N.A. (South)*, 183 F.3d 1269, 1274 (11th Cir. 1999).

11 In this case, the United States' owner liability arises from its ownership of land as a
12 trustee, and CERCLA states that a fiduciary includes a trustee. 42 U.S.C. § 9607(n)(5)(i).
13 Such owner liability, therefore, may be satisfied only out of assets held in trust by the
14 United States and not from the general U.S. Treasury. As noted above, the Court assigns
15 5% of the liability to the United States based solely on its role as owner of the land and the
16 actions it took in that role – approving permits and leases, including various oversight
17 powers in the permits and leases, advising on regulations, and collecting rents and royalties
18 for the benefit of the Nation.

19 The United States' operator liability arises from exploration actions of the AEC at
20 the Mine Sites, not from its fiduciary land ownership, and therefore is not limited to trust
21 assets by § 107(n). *See* 42 U.S.C. § 9607(n)(2) (Section 107(n) "does not apply to the
22 extent that a person is liable under this chapter independently of the person's ownership of
23 a vessel or facility as a fiduciary or actions taken in a fiduciary capacity."). The Court
24 concludes that the 25% share allocated to the United States for its purposeful promotion of
25 uranium mining in the 1950s, and the additional 5% allocated to it because of the benefits
26 it received from uranium production during the Cold War, should be assigned to its
27 operator liability, not its owner liability. The government's creation of the DUPP was not
28 a result of its land ownership for the Navajo Nation. Rather, it was undertaken by the AEC

1 for a very different purpose – enhancing national defense during the Cold War. It was
 2 motivated by the same forces that led the AEC to engage in the exploration activities that
 3 give rise to its operator liability in this case. Because the Court allocates this 30% share to
 4 the United States’ operator liability, it is not subject to the limitation of § 107(n). *Id.*

5 The United States suggests that there are no assets available in trust to satisfy the
 6 portion allocated for owner liability. It cites the Indian Non-Intercourse Act as holding
 7 that all assets held in trust are inalienable. But the Act is limited to land: “[n]o purchase,
 8 grant, lease, or other conveyance *of lands, or of any title or claim thereto*, from any Indian
 9 nation or tribe of Indians, shall be of any validity in law or equity, unless the same be made
 10 by treaty or convention entered into pursuant to the Constitution.” 25 U.S.C. § 177
 11 (emphasis added). The trust assets include more than land. Relevant regulations state that
 12 “[t]rust assets mean trust lands, natural resources, *trust funds, or other assets* held by the
 13 federal government in trust for Indian tribes and individual Indians.” 25 C.F.R. § 115.002
 14 (emphasis added); *see also id.* (“Trust funds means money derived from the sale or use of
 15 trust lands, restricted fee lands, or trust resources and any other money that the Secretary
 16 must accept into trust.”). The government conceded in its proposed findings and
 17 conclusions that “[t]he assets held in the fiduciary capacity include the trust lands, natural
 18 resources, *and other assets such as revenues*, all of which are held for the benefit of the
 19 Navajo Nation and individual Navajo tribal members.” Doc. 157 ¶ 82 (emphasis added).
 20 The United States has presented no evidence to show that non-land trust assets are
 21 insufficient to satisfy the 5% owner liability allocated above.

22 El Paso cites § 107(n)(7)(A) to suggest that the limitation in § 107(n)(1) does not
 23 apply at all in this case. Doc. 187 at 14. El Paso asserts that “the AEC acted in a capacity
 24 other than [as] a fiduciary during its mining activities at the Mine Sites[.]” *Id.* But
 25 § 107(n)(7)(A) has other requirements that El Paso does not address. *See*
 26 § 107(n)(7)(A)(ii), (B)(ii).

27 El Paso also argues that § 107(n) does not apply because the United States does not
 28 fall within the “safe harbor” provision in § 107(n)(4)(H). Doc. 187 at 15. This argument

1 conflates § 107(n)(1) and § 107(n)(4), which are clearly different provisions with different
2 purposes. El Paso cites no authority to suggest that a party which does not satisfy the safe
3 harbor provision in § 107(n)(4)(H) cannot receive the benefits of § 107(n)(1), and the
4 statute certainly does not say so.

5 In summary, § 107(n) has the following effect in this case: the 5% allocated to the
6 United States for its ownership in trust of the Mine Sites, and for actions it took as the land
7 owner and trustee, is recoverable only from trust assets. The 30% allocated to the United
8 States as a CERCLA operator is not subject to this limitation and may be recovered from
9 the United States Treasury.

10 **V. Declaratory Relief.**

11 As noted above, the parties agree that the Court may enter declaratory relief on the
12 allocation of response costs other than the specific amounts sought by El Paso. CERCLA
13 provides for declaratory relief in an action under § 107, but is silent on the availability of
14 such relief for contribution claims under § 113(f). *See* 42 U.S.C. § 9613(g)(2). Courts
15 have held, nonetheless, that declaratory relief may be entered in CERCLA contribution
16 actions. *See Newmont*, 2008 WL 4621566, at *62; *Boeing Co. v. Cascade Corp.*, 920
17 F.Supp. 1121, 1140 (D. Or. 1996); *cf. Cadillac Fairview*, 840 F.2d at 696 (establishing
18 prerequisites for declaratory judgments in CERCLA cases).

19 **IT IS ORDERED:**

20 1. With respect to El Paso's claim for response costs of \$1,393,448 through
21 August 2016, and \$502,500 paid to the United States, 65% of the liability for these costs is
22 allocated to El Paso and 35% to the United States. The United States shall reimburse El
23 Paso for 35% of these costs, but the 5% allocated to the United States on the basis of owner
24 liability may be satisfied only out of trust assets.

25 2. With respect to other response costs incurred to date and future response
26 costs, the Court enters this declaratory relief: 65% of the liability for these costs is allocated
27 to El Paso and 35% to the United States, but the 5% allocated to the United States on the
28 basis of owner liability may be satisfied only out of trust assets.

Dated this 16th day of April, 2019.

David G. Campbell

David G. Campbell
Senior United States District Judge