



Tronox Navajo Area Uranium Mines FY2020 FINANCIAL REPORT



U.S. Environmental Protection Agency
February 2022

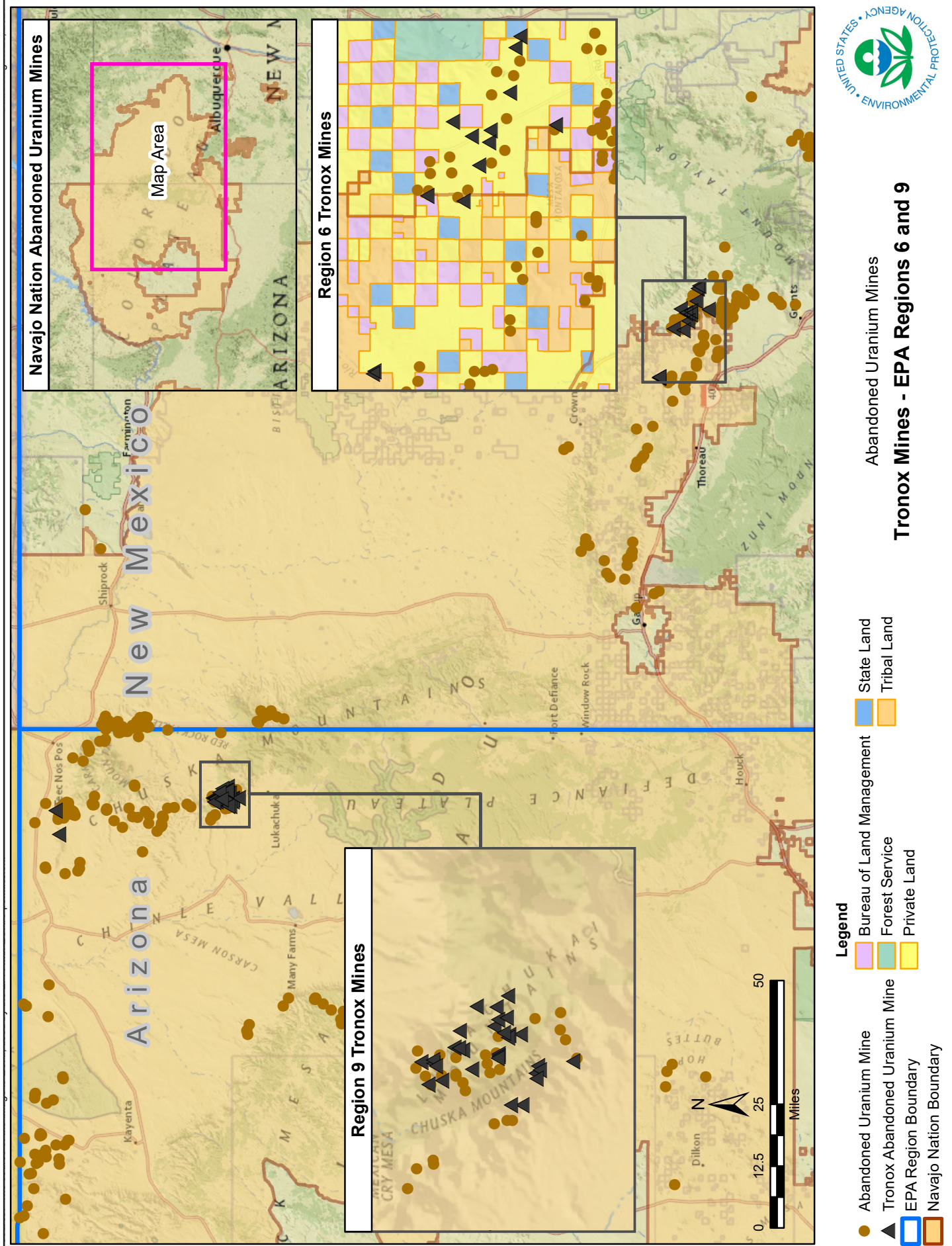


Contents

| | |
|---|----|
| 1.0: Tronox Settlement Background | 4 |
| 2.0: US EPA Tronox Settlement Financial Expenditure Breakout FY2011 through FY2020 | 5 |
| 2.2: Interest Earned on Tronox Special Accounts | 10 |
| 3.0: Tronox and Quivira NAUM Approved Project Descriptions for FY2011 through FY2020 | 13 |
| 4.0: Tronox and Quivira NAUM - Workforce Development Opportunities | 15 |

Common Acronyms used in Report

| | |
|--------|---|
| AUM | Abandoned Uranium Mines |
| NAUM | Navajo Area Uranium Mines |
| US EPA | United States Environmental Protection Agency |
| NNEPA | Navajo Nation Environmental Protection Agency |
| NNAML | Navajo Nation Abandoned Mine Lands |
| GSA | Geographic Sub-Area |
| RSE | Removal Site Evaluation |
| EE/CA | Engineering Evaluation / Cost Analysis |
| TCRA | Time Critical Removal Action |
| AAM | Alternate Analysis Memo |



Background

On January 21, 2015, the Tronox Settlement agreement resolving fraudulent conveyance claims against Kerr-McGee Corporation and related subsidiaries of Anadarko Petroleum Corporation went into effect. Pursuant to the settlement agreement, Anadarko paid \$5.15 billion plus interest to the litigation trust on January 23, 2015.

As a Result of the Tronox Settlement:

- US EPA received a distribution of 20% (~\$917 million) for the cleanup of 54 uranium mines that were operated, and subsequently abandoned, by Kerr-McGee on and near the Navajo Nation territory;
- US EPA also received a distribution of 2% (~\$92 million) for the cleanup of Quivira Mine Site; and
- Navajo Nation received a distribution of 1% (~\$45 million) in connection with the Shiprock Uranium Mill Site.

US EPA Tronox funds can be used to support activities related to the assessment and cleanup of the 54 Tronox Settlement mines and contamination caused by the mines. Examples of these activities include:

- Informing and involving the community about cleanup activities
- Investigating hazardous substances levels in water, soil, sediment, and indoor air
- Implementing land use controls such as fences and signs to warn people about dangerous areas
- Protecting cultural and biological resources in the mine areas
- Constructing access roads to the mines for cleanup operations

From the late 1940s to the 1980s, Kerr-McGee Corporation mined more than seven million tons of uranium ore on or near the Navajo Nation. More than 50 mines are being addressed in the Cove, Lukachukai area, Teec Nos Pos, Coyote Canyon, Casamero Lake, Ambrosia Lake and Beca/Prewitt Chapters.

 **Mt Taylor.**



US EPA Tronox Settlement Financial Expenditure Breakout FY2011 through FY2020

The approximately \$1 billion in funds that US EPA received for the clean-ups at 54 Tronox Navajo Area Uranium Mines (NAUM) has been deposited into a US EPA Superfund Special Account. In accordance with Section 122(b)(3) of CERCLA, the Agency established a special account to receive funds pursuant to an agreement with a Potentially Responsible Party (PRP). Special accounts are site-specific, interest-bearing sub-accounts housed within US EPA's Hazardous Substances Superfund (Superfund Trust Fund). Charges to a special account must be consistent with the terms of the settlement pursuant to which the funds are received.

Prior to Covid, US EPA, the Navajo Nation, and the state of New Mexico normally meet several times a year to discuss prioritizing response actions and funding projects at each specific Tronox NAUM site. In FY20, the only meeting occurred on February 26, 2020. The agencies strive to develop a coordinated and prioritized project list along with estimated funding requirements for the following calendar year. Information about individual project proposals are presented and discussed and this project list is memorialized in an annual memo, titled "Approval and Annual Funding Projections for Implementation of Tronox Settlement Memo. The memo is presented to the US EPA Region 6's Branch Chief, Assessment and Enforcement Branch, Superfund and Emergency Management Division, for concurrence and then to the US EPA Region 9's Assistant Director, Superfund and Emergency Management Division, for signature. Once projects are approved, a special account name/number is created for that project to track expenditures. Table 2.1 on page 7 summarizes approved Tronox projects by special account name, budget, expenditures, and balance.

These expenditures are further broken out into the following expenditure categories.

Payroll: US EPA costs associated with assessment and cleanup of the mine/mine areas including US EPA field staff, administrative, technical support, legal, contracting and management.

Travel: Travel cost associated with the management, assessment, and cleanup of the mine/mine areas specified in the Tronox Settlement.

Contracts: Contracting costs associated with the assessment and cleanup of the mine/mine areas specified in the Tronox Settlement.

Expenses: Expense costs for equipment, property, supplies, and materials associated with the assessment and cleanup of the mine/mine areas specified in the Tronox Settlement.

Grants: Grants associated with the management, assessment and cleanup of the mine/mine areas specified in the Tronox Settlement.

Interagency Agreements: US EPA has entered into interagency technical services agreements with US Army Corps of Engineers and US Geological Survey to support work on mine/mine areas specified in the Tronox Settlement.

Figure 2.2 on page 8 is a graphical representation of Tronox Expenditures by Category FY2011 through FY2020.

Accounting Line Active Project Names/Descriptions

| Names | Descriptions |
|---|---|
| Tronox NAUM (Region 6) | Overall planning and logistical support for Removal activities and settlement implementation, including salary and travel, Phase II San Mateo Creek Basin groundwater study, and state grants. |
| Tronox NAUM East GSA | Assessment of Tronox mines in the eastern area of Ambrosia Lake to complete an RSE and Engineering Evaluation/Cost Analysis (EE/CA). Includes contracting, salary, and travel specific to this project. |
| Tronox NAUM West GSA | Assessment of Tronox mines in the western area of Ambrosia Lake to complete an RSE and EE/CA. Includes contracting, salary, and travel specific to this project. |
| Tronox NAUM Central GSA | Assessment of Tronox mines in the central area of Ambrosia Lake to complete an RSE and EE/CA. Includes contracting, salary, and travel specific to this project. |
| Tronox NAUM S18 Mine Residential Removal | A time critical radon abatement project for a residential structure adjacent to the Section 18 Tronox Mine in Ambrosia Lake. Includes contracting, salary, and travel specific to this project. Project was completed in FY18 Quarter 1. |
| Tronox NAUM Section 10 | Assessment of the Section 10 Tronox mine in Ambrosia Lake to complete an RSE and EE/CA. Includes contracting, salary, and travel specific to this project. |
| Tronox NAUM Sections 32 and 33 | A joint project between Region 6 and 9 to assess the Sections 32/33 Tronox mines in the Smith Lake sub-district in the Casamero Lake area to complete an RSE and EE/CA. |
| Tronox Abandoned Uranium Mines on the Navajo Nation (bankruptcy settlement) (Region 9) | Tronox NAUM activities (2011 – 2015) prior to the 2015 settlement that included quarterly meetings with Navajo Nation EPA; settlement implementation planning; accounting and contracting strategy; community involvement; Tronox portal development, Northern Agency ASPECT data collection, and grants. |
| Tronox NAUM Cove Transfer Station | Construction activities to mitigate surface erosion at the former transfer station located in the Cove Chapter of the Navajo Nation, in eastern Arizona. |
| Tronox NAUM Mesa I Mine | Mesa Mine I Preliminary Site Assessment conducted in 2014– 15, to determine risk to human health and the environment. A RSE was conducted in FY 2018. |
| Tronox NAUM | Activities included quarterly meetings with Navajo Nation; settlement records review; settlement implementation planning; Navajo Nation Mines Portal Database; Northern Agency ASPECT Gamma survey; Annual Quarterly reports; Tronox Northern Agency RSEs; Tronox Northern Agency EE/CAs; Cove Mesa V Main Access Road Improvement/Design; Cove Mine Access Assessment; Northern Agency Cultural Resources Survey; community involvement; and Navajo Nation grants. |
| Tronox NAUM Cove Sitewide Conceptual Model and Data Gaps | Assimilate information from previous studies and actions of the site; research, gather and analyze other existing data and documents that could be used to develop the conceptual site model; break the site out into investigation areas based on known information; provide pictorial representations of the site; depict exposure pathways and receptors; provide recommendations for paths forward for each of the investigation areas; and, suggest general areas for data gap investigations. |
| Tronox NAUM Quivira Mines | Activities at the Quivira Mines include: the Engineering Evaluation/Cost Analysis; and discuss the removal options with Navajo Nation, community members, and other stakeholders. |
| Tronox NAUM Cove Area Air Study | Activities include sampling station construction, site restoration, and funding a year-long grant to allow Navajo Nation EPA staff to retrieve field samples. |
| Tronox NAUM Mesa II Mine | Activities include a time critical removal action (TCRA), sampling support and EE/CA. The TCRA was to repair the erosion of the burial cell and reestablish a functional drainage channel to avoid further erosion of the burial cell. Air monitoring and soil screening was conducted during the removal action to provide sampling support and ensure that work practices and dust suppression methods used during the TCRA prevented the off-site migration of dust with radionuclides. |
| Tronox NAUM Mesa V Mine | Activities at the Mesa V Mine include the EE/CA, and a removal action at the Mesa V Haul Shaft and a radon study, discussing the removal options with Navajo Nation, community members, and other stakeholders. |

Table 2.1: US EPA Tronox and Quivira Approved Projects, Budgets, and Expenditures: FY2011 through FY2020

The chart below represents Budgets and Actual (paid) Expenditures. Each project has Unliquidated Obligations (ULO) associated with proposed activities (financial commitments to grants and contracts). For the purposes of this report, ULOs are combined into the Remaining Balance calculation.

| Special Account Names | Total Budget | Total Expenditures | Remaining Balance |
|--|-------------------|--------------------|-------------------|
| US EPA Region 6 | | | |
| Tronox NAUM | \$5.9M | \$4.1M | \$1.8M |
| Tronox NAUM East GSA | \$2.3M | \$2.1M | \$247.0K |
| Tronox NAUM West GSA | \$2.0M | \$1.7M | \$287.1K |
| Tronox NAUM Central GSA | \$2.3M | \$1.9M | \$355.8K |
| Tronox NAUM S18 Mine Residential Removal | \$22.9K | \$22.9K | \$1.2K |
| Tronox NAUM Section 10 | \$300K | \$300K | \$0 |
| Tronox NAUM Sections 32 and 33 | \$815.3K | \$732.2K | \$83.1K |
| Subtotal | \$13.6M | \$11.3M | \$2.3M |
| US EPA Region 9 | | | |
| Abandoned Uranium Mines on the Navajo Nation | \$3.2M | \$3.2M | \$0 |
| Tronox Quivira Mines (formerly NE Churchrock Quivira) | \$96.8M | \$8.0M | \$88.8M |
| Cove Transfer Station - Tronox | \$5.3M | \$3.6M | \$1.7M |
| Mesa I Mines - Tronox | \$9.4K | \$9.4K | \$0 |
| Section 32 AUM Site - Tronox | \$2.1M | \$1.5M | \$592.1K |
| Section 33 AUM Site - Tronox | \$70.7K | \$70.7K | \$0 |
| Tronox NAUM Cove Wash Regional Assessment | \$4.2M | \$3.1M | \$1.1M |
| Tronox Navajo Area Uranium Mines | \$922.4M | \$18.0M | \$904.4M |
| Tronox NAUM Cove Sitewide Conceptual Model and Data Gaps | \$3.1M | \$1.5M | \$1.6M |
| Tronox NAUM Mesa II | \$8.6M | \$1.6M | \$7.0M |
| Tronox NAUM Mesa V | \$2.2M | \$321.4K | \$1.9M |
| Tronox NAUM San Mateo Creek Basin | \$20.3K | \$7.9K | \$12.4K |
| Tronox NAUM Cove Mesa I Mines | \$2.2M | \$211.9K | \$2.0M |
| Tronox NAUM Cove Mesa III Mines | \$367.8K | \$35.3K | \$332.4K |
| Tronox NAUM Cove Mesa IV Mines | \$1.5M | \$141.3K | \$1.3M |
| Tronox NAUM Cove Mesa VI Mines | \$367.8K | \$35.8K | \$331.9K |
| Tronox NAUM Brodie I Mine | \$367.8K | \$35.3K | \$332.4K |
| Tronox NAUM Block K Mine | \$367.8K | \$35.3K | \$332.4K |
| Tronox NAUM Step Mesa | \$735.5K | \$70.6K | \$664.9K |
| Tronox NAUM Flag Mesa | \$1.5M | \$141.3K | \$1.3M |
| Tronox NAUM Knife Edge | \$367.8K | \$35.3K | \$332.4K |
| Subtotal | \$1.055B | \$50.7M | \$1.004B |
| Total All Special Accounts | \$1,069.3M | \$52.4M | \$1,016.8M |

Total Budget includes interest accrued, see pg 10 for interest discussion.

*Reports generated by EPA's CBOR (Compass Business Objects Reporting) system. An unliquidated obligation is the unexpended balance remaining from the amount of federal funds that the US EPA has obligated to an agreement.

Table 2.2: US EPA Tronox and Quivira Approved Projects, Budgets, and Expenditures: FY2011 through FY2020

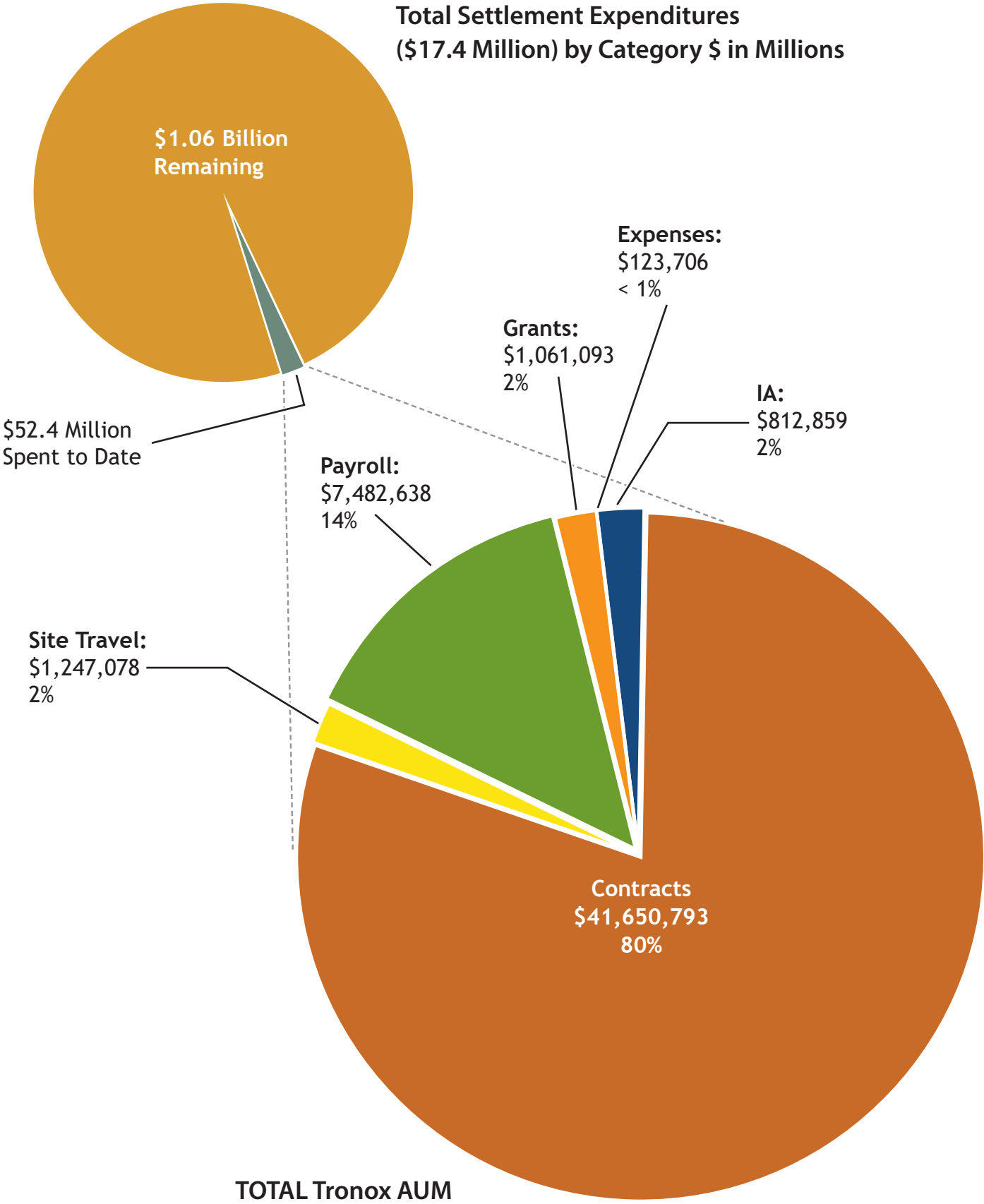
An overview of the approved projects and activities associated with these expenditures is located in Section 3.

Special Account Summary

| Special Account Names | Contracts | IA | Expenses | Grants | Payroll | Site Travel | Total Spent |
|--|----------------|-----------------|-----------------|-----------------|----------------|-----------------|----------------|
| US EPA Region 6 | | | | | | | |
| Tronox NAUM | \$3.0M | \$0 | \$0 | \$106K | \$1M | \$189K | \$4.2M |
| Tronox NAUM East GSA | \$1.8M | \$0 | \$0 | \$0 | \$233K | \$52K | \$2.1M |
| Tronox NAUM West GSA | \$1.5M | \$0 | -- | \$0 | \$119K | \$37K | \$1.7M |
| Tronox NAUM Central GSA | \$1.8M | \$0 | \$0 | \$0 | \$53K | \$18K | \$1.8M |
| Tronox NAUM S18 Mine Residential Removal | \$24K | -- | \$134M | -- | \$2K | -- | \$26K |
| Tronox NAUM Section 10 | \$263K | \$0 | -- | \$0 | \$2K | \$0 | \$265K |
| Tronox NAUM Section 33 | \$656K | \$0 | -- | \$0 | \$65K | \$14K | \$735K |
| Subtotal | \$8.8M | \$0 | \$134M | \$106.2M | \$1.4M | \$309.1K | \$10.8M |
| US EPA Region 9 | | | | | | | |
| Abandoned Uranium Mines on the Navajo Nation | \$1.8M | -- | \$6K | \$115K | \$1.2M | \$115K | \$3.2M |
| Tronox Quivira Mines (formerly NE Churchrock Quivira) | \$7M | \$132K | \$4K | \$58K | \$625K | \$127K | \$8M |
| Cove Transfer Station - Tronox | \$3.5M | -- | \$70 | \$2.9K | \$77K | \$33K | \$3.6M |
| Mesa I Mines - Tronox | \$0 | -- | -- | -- | \$7.3K | \$2K | \$9.4K |
| Section 32 AUM Site - Tronox | \$1.4M | -- | \$168 | \$7K | \$48K | \$9K | \$1.5M |
| Section 33 AUM Site - Tronox | \$69K | -- | -- | -- | \$561 | \$1K | \$71K |
| Tronox NAUM Cove Wash Regional Assessment | \$2M | \$0 | \$3.3K | \$233K | \$684K | \$123K | \$3M |
| Tronox NAUM | \$14M | \$81K | \$110K | \$82K | \$3.2M | \$493K | \$18M |
| Tronox NAUM Cove Sitewide Conceptual Model and Data Gaps | \$462K | \$600K | -- | \$346K | \$119K | \$19K | \$1.5M |
| Tronox NAUM Mesa II | \$1.5M | -- | -- | -- | \$42K | \$16K | \$1.6M |
| Tronox NAUM Mesa V | \$177K | -- | \$300 | \$110K | \$34K | -- | \$321K |
| Tronox NAUM San Mateo Creek Basin | -- | -- | -- | -- | \$8K | -- | \$8K |
| Tronox NAUM Cove Mesa I Mines | \$212K | -- | -- | -- | -- | -- | \$212K |
| Tronox NAUM Cove Mesa III Mines | \$35K | -- | -- | -- | -- | -- | \$35K |
| Tronox NAUM Cove Mesa IV Mines | \$141K | -- | -- | -- | -- | -- | \$141K |
| Tronox NAUM Cove Mesa VI Mines | \$35K | -- | -- | -- | \$507 | -- | \$36K |
| Tronox NAUM Brodie I Mine | \$35K | -- | -- | -- | -- | -- | \$35K |
| Tronox NAUM Block K Mine | \$35K | -- | -- | -- | -- | -- | \$35K |
| Tronox NAUM Step Mesa | \$71K | -- | -- | -- | -- | -- | \$71K |
| Tronox NAUM Flag Mesa | \$141K | -- | -- | -- | -- | -- | \$141K |
| Tronox NAUM Knife Edge | \$35K | -- | -- | -- | -- | -- | \$35K |
| Subtotal | \$32.8M | \$813K | \$124K | \$955K | \$6.02M | \$938K | \$41.6M |
| Total | \$41.6M | \$812.8K | \$123.7k | \$1M | \$7M | \$1.2M | \$52.5M |

**US EPA reporting adjusted to reflect actual expenditures; Unliquidated Obligations (ULOs) or commitments to projects without spending will no longer be reported on this table. Discrepancies may be noted between figures above and EPA's Special Account Summary packages due to the posting date of invoices paid. Indirect Costs are not displayed.*

Tronox Total Disbursed Breakout by Cost Category



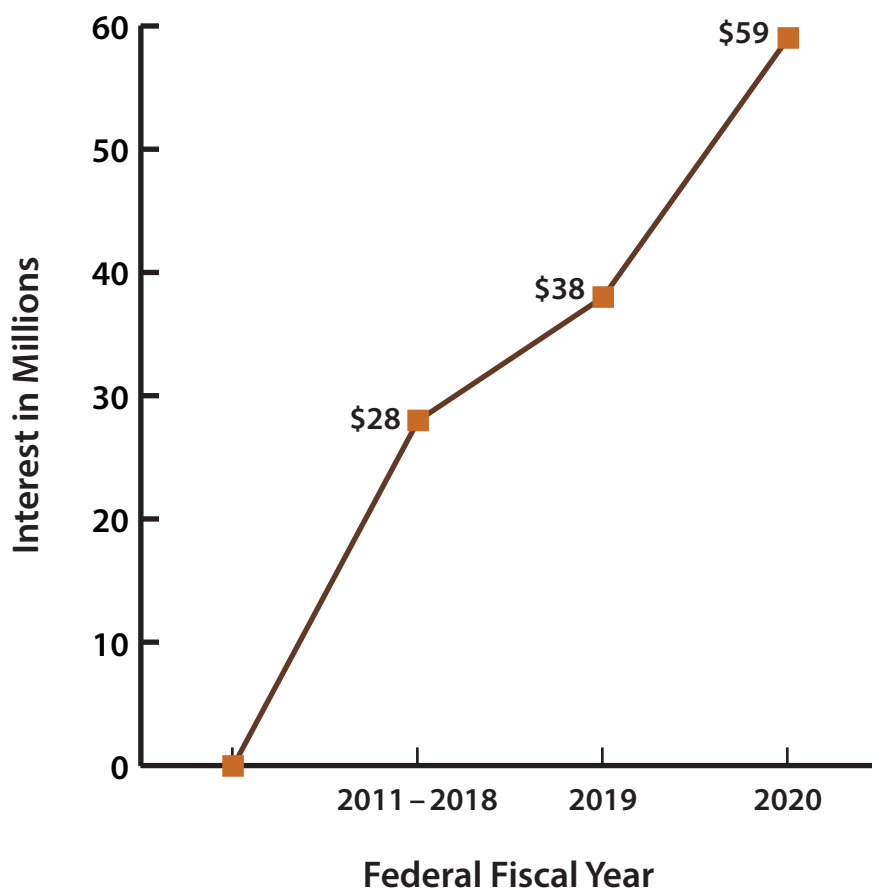
Interest Earned on Tronox Special Accounts

Special accounts are funded entirely with money received from PRPs, (in this case the settlements identified in Priority reports). US EPA retains money received through settlements with PRPs in these site-specific accounts to conduct planned future cleanup work at the site based on the terms of the settlement agreement.

Accumulated Interest through Each Period

Tronox Accounts Interest Earned

| Fiscal Year | Rate |
|-------------|-------|
| 2020 | 2.22% |
| 2019 | 1.75% |
| 2018 | 0.87% |
| 2017 | 0.70% |
| 2016 | 0.67% |
| 2015 | 0.75% |
| 2014 | 0.81% |
| 2013 | 0.78% |
| 2012 | 0.74% |
| 2011 | 0.69% |



Special Accounts Management

Special accounts for the Tronox NAUMs are managed and used consistent with national special account policy and guidance. Information about national special account policy, guidance, and management can be found on EPA's Superfund Special Accounts webpage at <https://www.epa.gov/enforcement/superfund-special-accounts>.

Funds maintained in the Hazardous Substance Superfund Trust Fund are invested by the Treasury in U.S. Market Based Securities. Treasury's Bureau of Fiscal Services uses the yield to maturity effective at the time of purchase of these securities to calculate the Superfund Interest Rate each fiscal year. Interest is accrued and available in each account based on the account's available balance. Interest accrued is kept in the special account on which it is earned.

Tronox and Quivira Contracting Vehicles

Since the Tronox settlement in 2011, US EPA has been utilizing new and existing contracts to conduct cleanup activities, which allowed the Agency to expeditiously achieve our goal of protecting human health and the environment on the Navajo Nation. These contracts include:

- **Clawson Excavating:** a Navajo-Woman owned/ Small Business Priority 1 Company was awarded a \$1M contract to complete mine access and road upgrades for the approximately 34 site mine in the Cove Chapter.
- **START Contract:** Superfund Technical Assessment and Response Team – provides scientific/ technical support for assessing chemical, biological, and radiological contamination as well as site assessment and remedial support activities.
- **ERRS Contract:** Emergency and Rapid Response Services – provides management, field personnel, and equipment resources to execute decontamination and demolition and removal services.
- **RAC:** Remedial Action Contract – provides remedial response, enforcement oversight, non-time critical removal activities, engineering support, and assessment services.
- **TASC Contract:** Technical Assistance Services for Communities – to help communities better understand the science, regulations and policies of environmental issues.
- **RAES Contract:** The Response, Assessment and Evaluation Services \$85 million capacity contract was awarded on October 11, 2017 to Tetra Tech, and the scope of work includes site assessment of the abandoned uranium mines.

US EPA Region 9's contracts direct that best efforts shall be used to give Indian organizations and Indian-owned economic enterprises the opportunity to participate in subcontract awards. RAES specifically acknowledges the Navajo Employment Goals and reports progress in reporting on those goals.



 **US EPA, Navajo AML and Navajo EPA staff at Mesa II.**

Tronox and Quivira Grant Expenditures for FY2011 through FY2020 by US EPA Region, Approved Projects and Grants

US EPA provides grant funding to agencies in support of community interests and to fund partner agencies' activities that support the assessment and cleanup of Tronox NAUMs. Funding has been provided to the Navajo Nation, the State of New Mexico and Diné College. The purposes and levels of the funding are outlined below.

State of NM

\$221k was provided to the State of New Mexico to support technical review of workplans, review cleanup options, assist with field oversight and interagency collaboration.

Navajo Nation EPA

Over \$4.5M has been provided to support technical review of remediation plans and final cleanup options, community involvement activities including coordination for community meetings, distribution of information, and collecting environmental samples.

Navajo Nation Abandoned Mines Lands Dept.

\$1.7M has been provided for on-site construction activities and technical review of proposed remediation strategies.

Diné College

Funding in the amount of \$809,000 is supporting studies of uranium effects on livestock and the Cove watershed; Diné summer interns collected data and helped investigate potential mine impacts in the larger Cove Watershed.



 **Navajo AML, US EPA and Navajo EPA moving AML vegetation boxes.**



 **Mesa II.**

COVID-19 Impact on Tronox Activities & 2020 – 2029 Ten – Year Plan

Much of the planned activities for Fiscal Year (FY) 2020 were suspended due to the international pandemic. Like many communities, the Navajo Nation went on shelter in place status in mid-March 2020 (via Navajo Department of Health Public Health Emergency No. 2020 – 001 — Limit Mass Gatherings and Gatherings Due to COVID-19). US EPA also halted field efforts except in cases of urgent or emergency activities (i.e., wildfires, hurricanes or chemical releases). This delayed most planned community and technical meetings as well as planned field efforts. US EPA and NNEPA utilized the time to move forward technical and policy documents including the 2020 – 2029 Ten-Year Plan which continues the effort of the previous Five-Year Plans and identifies the next steps in addressing the human health and environmental risks associated with the legacy of uranium mining on the Navajo Nation. The Ten-Year Plan was developed in cooperation with

multiple federal partner agencies including Bureau of Indian Affairs, Department of Energy, Nuclear Regulatory Commission, Navajo Area Indian Health Service, and the Agency for Toxic Substances and Disease Registry to incorporate goals and milestones for achieving assessment and cleanup actions.

The document contains discrete sections that includes objectives in the following areas:

- Contaminated Structures
- Water
- Drinking Water
- Tuba City Dump Site
- Health
- Community Involvement
- Navajo Workforce Development

The Plan can be found on US EPA's NAUM website: <https://www.epa.gov/navajo-nation-uranium-cleanup/abandoned-mines-cleanup-federal-plans> [Search terms, EPA, Tronox, Reporting]

REGION 6

Ambrosia Lake Tronox Navajo Area Uranium Mines Project Area

The Ambrosia Lake Tronox Navajo Area Uranium Mines Project Area's focus for FY20 was sharing of technical information and reports with the Tronox Stakeholder Group, providing opportunities to comment on technical documents, and developing draft EE/CA documents to meet commitments made to the US EPA's Office of Inspector General (OIG). This work was done on 18 of the mines in the Ambrosia Lake area which are grouped together into Geographic Sub-Areas, or GSAs, to make field work manageable. Those groupings are the East GSA (three mines), Central GSA (eight mines), West GSA (six mines) and Section 10. The 19th mine is Section 33 Mine and is part of the Section 32/Section 33 Mines

Site project for which Region 9 assumed the Lead role on September 28, 2020. The 20th mine in Region 6 is the Spencer Mine, which was reclaimed by New Mexico Mining and Minerals Division using non-Tronox funding from the Bureau of Land Management.

FY20 began with receiving comments from members of the Tronox Stakeholder Group that followed the August 2019 technical workshop in Gallup, New Mexico that was used to discuss the Removal Site Evaluations (RSEs). US EPA had previously agreed to develop documents that provided the Tronox Stakeholder Group an opportunity to review and provide comment on potential cleanup alternatives (no remedy selected or recommended) prior to drafting EE/CAs. These documents were

titled “Alternative Analysis Memos (AAMs)” and are informal documents that are outside of the CERCLA and National Contingency Plan process. Region 6 completed AAMs for the East GSA, Central GSA, West GSA, and Section 10.

The completion of each AAM was then followed by online technical workshops to review each AAM. These were held on July 10, 2020, for the East GSA, October 30, 2020, for the Central GSA, September 11, 2020, for the West GSA, and July 10, 2020, for Section 10. These webinars provided an overview of the potential disposal alternatives and answered any immediate questions by the Tronox Stakeholder Group.

Region 6 then finalized the draft EE/CAs, taking into account any comments that were provided during the initial AAM review period. The draft EE/CAs were completed on October 9, 2020, for the East GSA and Section 10 Mine Site, and on November 9, 2020, for the West GSA and Central GSA. These draft EE/CAs met the commitment US EPA Region 6 had made in the August 2018 OIG report, “EPA Needs to Finish Prioritization and Resource Allocation Methodologies for Abandoned Uranium Mine Sites on or Near Navajo Lands.” It is important to note the development of these draft EE/CAs is an early first of many steps for these documents. This will allow US EPA to continue to receive additional comments from the Tronox Stakeholders which Region 6 will review and incorporate, as needed, in future iterations of the draft EE/CAs. In addition, all EE/CAs undergo a minimum 30 day comment period for the public, affording individuals, communities, and other interested parties an opportunity to comment on EPA’s proposals prior to a final decision being made.

REGION 9

Alternative Analysis Memo-Quivira

FY20 activities at the Quivira Mines included updating the Draft EE/CAs and discussing the removal options with Navajo Nation, community members, and other stakeholders. US EPA participated in one community meeting before COVID restrictions prevented in-person meetings. Subsequent to the shelter in place, US EPA participated in 11 conference calls with the community.

Additionally, US EPA reviewed available literature on capping technologies and drafted a paper evaluating the performance of evapo-transpiration covers as an alternative for capping the mine waste.

Tronox-Northern Agency sites

The Tronox Northern Agency Project Team is developing draft EE/CAs for all 34 sites in the Lukachukai Mountains and Tse Tah areas. This includes risk assessment and developing removal alternatives development based on RSE data. The team conducted a data gaps analysis to determine what additional information is needed to complete EE/CAs. To support the effort, the team made progress on updating the regional conceptual site model (CSM), updating the historical site assessment, and developing efficiently implementable groupings for the EE/CAs. The data gaps analysis work in FY2020 will assist in the complete characterization of the mines and inform data gaps field work, originally scheduled for Spring 2020 until, which been delayed until Spring/Summer 2022 at the earliest due to the pandemic.

February Cove Community Meeting

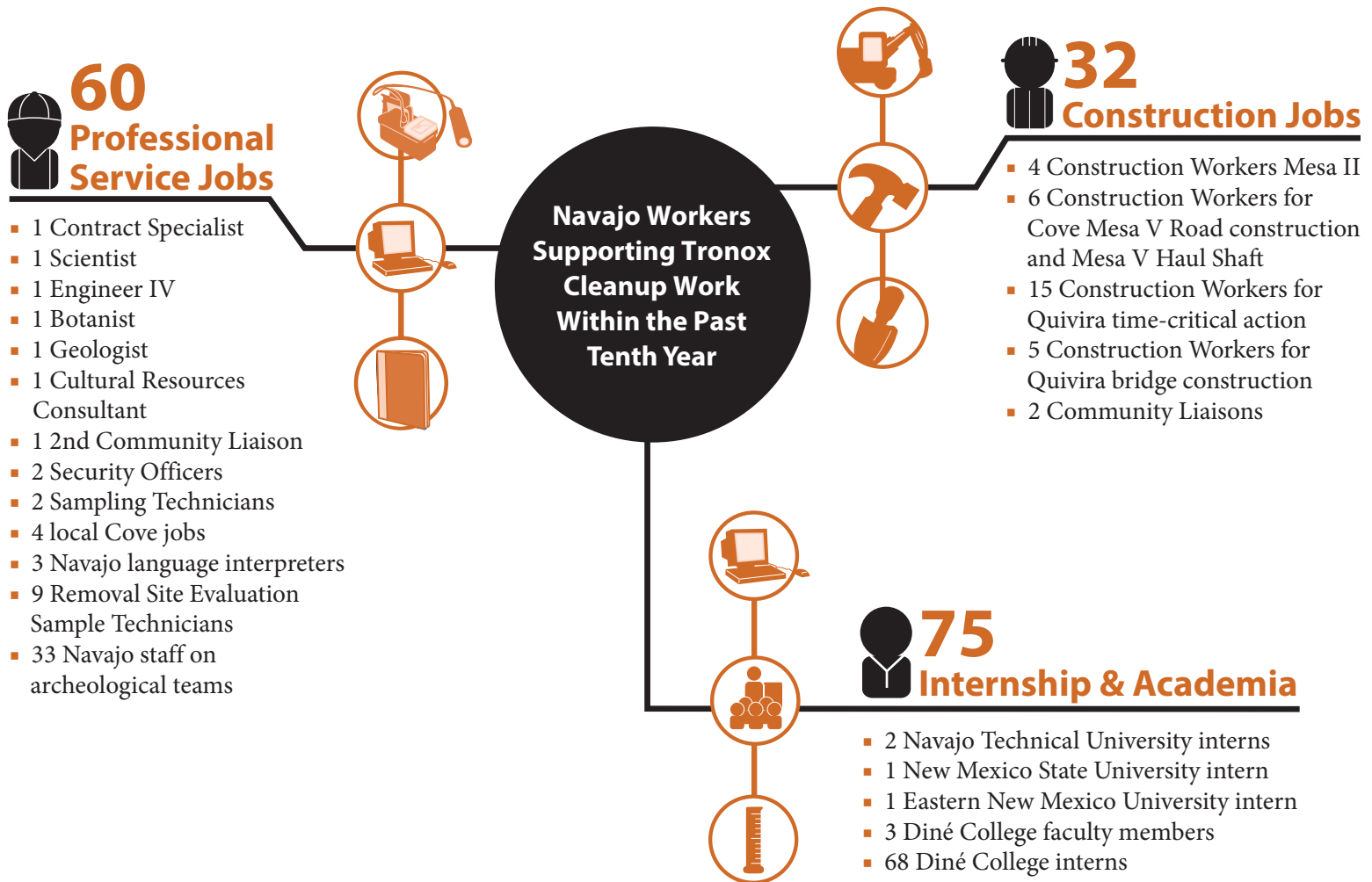
In February 2020, RPMs Chip Poalinelli and Jesse Kass attended and presented at a Cove community meeting, the last community meeting for the year before stay-at-home orders limited in-person meetings. General updates were given about the Mesa II and Mesa V TCRAs which took place in late 2019. The upcoming AAMs for Tronox were discussed and are scheduled to be completed by the end of 2021.



January 2020 MAAT meeting. Technical discussions regarding the Tronox sites. Perry Charley (Diné College) standing, Valinda Shirley, Navajo EPA and Chip Poalinelli, US EPA.

Tronox and Quivira NAUM – Workforce Development Opportunities

Cleaning up abandoned uranium mines on the Navajo Nation creates jobs for Navajo workers and provides opportunities for Navajo businesses. The work is project specific and usually of a short duration. Some positions may be part-time, seasonal and/or limited to a specific project. These opportunities will increase as cleanup work at the mines accelerates. The following provides a summary of workers that have supported Tronox Mine Cleanup work:





 **Cove Mesa V Haul Shaft**

For More Information (US EPA Contacts)

US EPA Region 6

Kevin Shade

Grants Mining District Coordinator
US EPA, Region 6
Mail Code: SEDAS
1201 Elm Street, Suite 500
Dallas, Texas 75270 – 2102
(214) 665 – 2708
shade.kevin@epa.gov

US EPA Region 9

Jesse Kass

Tronox NAUM Coordinator
US EPA, Region 9
Mail Code: 9-SFD-6-2
75 Hawthorne Street
San Francisco, CA 94105
(415) 606 – 8136
kass.jesse@epa.gov