

South Dakota Science and Technology Authority

**Board Meeting
December 14, 2017**



South Dakota Science and Technology Authority

630 East Summit Street
Lead, SD 57754

Call to Order

1A. Call Roll

Dr. Ani Aprahamian
Mr. Paul Christen
Mr. Dana Dykhouse
Ms. Pat Lebrun
Mr. Casey Peterson
Dr. Jan Puszynski, ex-officio member
Mr. Ron Wheeler
Dr. Bob Wilson

1B. Introduce Guests

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Approve Agenda—Chairperson Casey Peterson

Attached is the agenda for the December 14, 2017 meeting.

Recommended Action:

Motion to approve agenda as presented.

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AGENDA
Meeting of the Board of Directors
Thursday, December 14, 2017 at 9:00 AM (MT)
****Yates Education & Outreach Conference Room****
Public (Open) Session: 1-866-740-1260, Access Code: 7228650, www.readytalk.com

SDSTA Mission: *To advance compelling underground, multidisciplinary research in a safe work environment and to inspire and educate through science, technology and engineering.*

Title	Report	Recommendations
1. Call to Order A. Call Roll B. Introduce Guests	-- Chair Casey Peterson	<i>Informational</i>
2. Approve Agenda	-- Chair Casey Peterson	<i>Motion to approve agenda</i>
3. Conflict of Interest Disclosure	-- Mr. Tim Engel	<i>Informational</i>
4. Approve Minutes	-- Chair Casey Peterson	<i>Motion to approve September 21, 2017 minutes as presented</i>
5. Disclosures and Waivers Under SDCL CH. 3-23	-- Mr. Tim Engel	<i>Informational</i>
6. Report from Audit Committee A. Audit Committee Teleconference B. Audit Report-Fiscal Year Ended June 30, 2017, Final	-- Ms. Pat Lebrun	<i>Discussion</i> <i>Motion to accept Audit Committee Report and to request Audit Report approval at the next regularly scheduled board meeting per statute</i>
7. Financial Report A. November Financial Report and Statements	-- Mr. Mike Headley -- Ms. Nancy Geary	<i>Motion to accept report as presented</i>
8. Report from Executive Director A. SDSTA Quarterly Update B. Declarations of Surplus C. LBNF Update, including amendment to existing lease	-- Mr. Mike Headley -- Mr. Joshua Willhite	<i>Informational</i> <i>Informational</i> <i>Presentation; Motion to authorize the Chairperson to sign an amended or modified lease to include additional space in the Ross Dry, as presented</i>
9. Lobbyist Registration	-- Mr. Tim Engel	<i>Motion to designate Mike Headley, Ron Wheeler and Tim Engel as lobbyists for the SDSTA</i>
10. SDSTA Policies and Procedures		<i>Motion to approve updated Whistleblower Policy as presented</i>

Please do not place or accept cell phone calls during this meeting. A copy of this agenda has been posted in a manner visible to the public at the entrance to the South Dakota Science and Technology Authority office located at 630 East Summit Street, Lead, South Dakota at least 72 hours prior to this meeting. Telephone: (605) 722-8650.

AGENDA
Meeting of the Board of Directors
Thursday, December 14, 2017 at 9:00 AM (MT)
****Yates Education & Outreach Conference Room****
Public (Open) Session: 1-866-740-1260, Access Code: 7228650, www.readytalk.com

Title	Report	Recommendations
11. Executive Session (closed meeting)	-- Chair Casey Peterson	<i>Motion to enter executive session to discuss personnel matters and to consult with legal counsel concerning contractual matters</i>
12. Report from Executive Session	-- Chair Casey Peterson	<i>Motion to accept executive session report</i>
13. Confirm 2018 Board Schedule	-- Chair Casey Peterson	<i>Thu, March 22—8am (MT) Thu, June 21—8am (MT) Tue, September 18—8am (MT) Thu, December 20—9am (MT)</i>
14. Board Comments		
15. Adjourn	-- Chair Casey Peterson	<i>Motion to adjourn</i>

****Cheyenne Crossing will cater a lunch for the board following this meeting**

SDSTA Board Member Terms of Service, Committees and Schedule

Board Members and Terms of Service			
	Board Members	Appointed	Term Expires
1.	Dr. Ani Aprahamian	Re-appointed December 10, 2015	December 9, 2021
2.	Mr. Paul Christen	Re-appointed August 5, 2016	August 8, 2022
3.	Mr. Dana Dykhouse, Vice-Chair	Re-appointed August 1, 2014	August 14, 2020
4.	Ms. Patricia Lebrun, Secretary-Treasurer	Re-appointed August 5, 2016	August 8, 2022
5.	Mr. Casey Peterson, Chair	Re-appointed August 25, 2015	August 8, 2021
6.	Mr. Ron Wheeler, Vice-Chair	Re-appointed April 10, 2014	April 9, 2020
7.	Dr. Robert Wilson	August 24, 2015	August 8, 2021
8.	Dr. Jan Puszynski, <i>ex-officio member</i>	SDSM&T Interim President until Jan 7, 2018	
Committees and Members (2017-2018)			
	Audit Committee Members:	Nominating Committee Members:	
	> Pat Lebrun-Chair	> Ani Aprahamian	
	> Paul Christen	> Dana Dykhouse	
	> Casey Peterson, <i>ex-officio</i>		
2018 Board Schedule			
	Thursday, March 22, 2018	8:00 am (MT)	E&O Bldg
	Thursday, June 21, 2018	8:00 am (MT)	E&O Bldg
	Tuesday, September 18, 2018	8:00 am (MT)	E&O Bldg
	Thursday, December 20, 2018	9:00 am (MT)	E&O Bldg, lunch

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Conflict of Interest Disclosure—Mr. Tim Engel

Recommended Action:
Informational.

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Approve Minutes—Chairperson Casey Peterson

Attached are the September 21, 2017 final Board Minutes.

Recommended Action:

Motion to approve the Minutes of the September 21, 2017 meeting as presented.

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South Dakota Science and Technology Authority Board of Directors
Meeting Minutes
Thursday, September 21, 2017
Lead, South Dakota

The Board of Directors of the South Dakota Science and Technology Authority (SDSTA) convened at 8:08AM Mountain Time (MT) on Thursday, September 21, 2017 in the Education and Outreach (E&O) Building Conference Room at the South Dakota Science and Technology Authority, 630 East Summit Street, Lead, South Dakota.

MEMBERS OF THE BOARD IN ATTENDANCE

Mr. Paul Christen (in person)
Secretary/Treasurer Patricia Lebrun (in person)
Chairperson Casey Peterson (in person)
Dr. Jan Puszynski (in person)
Vice Chairperson Ron Wheeler (by phone)
Dr. Robert Wilson (by phone)

MEMBERS OF THE BOARD ABSENT

Dr. Ani Aprahamian
Mr. Dana Dykhouse

SDSTA STAFF

Mr. Tim Engel, Legal Counsel
Ms. Nancy Geary, Chief Financial Officer
Mr. Mike Headley, Executive Director
Ms. Sharon Hemmingson, Business Services & Contracts Manager
Ms. Mandy Knight, Administrative Services Manager
Mr. KC Russell, Cultural Diversity Coordinator
Mr. Allan Stratman, Engineering Director
Ms. Connie Walter, Communications Director

ALSO PRESENT DURING ALL OR PART OF THE MEETING

Ms. Billi Bierle, Sanford Lab Homestake Visitor Center Executive Director
Dr. Becky Bundy, E&O Education Specialist (BHSU)
Ms. Donna Christen, wife of Board Member Mr. Christen
Ms. Julie Dahl, Education and Outreach Education Specialist (BHSU)
Dr. Peggy Norris, Education and Outreach Deputy Director (BHSU)
Dr. Ben Sayler, Sanford Science Education Center Director
Mr. Jim Sheridan, guest of Board Member Mr. Christen
Mr. Al Van Zee, Journalist for Black Hills Pioneer

ITEM 1. CALL TO ORDER

Chairperson Peterson called the meeting to order at 8:08 AM (MT). Roll call was held. All attendees were present in person except Mr. Wheeler and Dr. Robert Wilson, who joined by telephone. Dr. Ani Aprahamian and Mr. Dana Dykhouse were absent.

Chairperson Peterson then asked audience members to introduce themselves.

ITEM 2. APPROVE AGENDA

Chairperson Peterson asked if there were any modifications to the agenda and hearing none asked for a motion to approve the agenda.

Motion by Mr. Christen and second by Ms. Lebrun to approve the agenda as presented. Motion passed unanimously.

ITEM 3. APPROVE MINUTES

Chairperson Peterson asked for comments, changes or corrections to the Minutes of the June 22 and June 28, 2017 meetings. There were none.

Motion by Mr. Wheeler and second by Dr. Wilson to approve the Minutes of the June 22, 2017 and June 28, 2017 meetings as presented. Motion passed unanimously.

ITEM 4. DISCLOSURE UNDER SDCL CH. 3-23

SDSTA Legal Counsel Mr. Tim Engel said changes to the state's disclosure laws were discussed over the past several board meetings and there are two agenda items relating to this topic. First, the law that went into effect July 1, 2017 requires board members to disclose contracts they have with state agencies or political subdivisions. He said this particular disclosure included in the board packet from Chairperson Peterson does not require board approval and is only informational. Chairperson Peterson has an ownership interest in an entity in those kinds of contracts. Mr. Engel said it was necessary for Chairperson Peterson to provide the disclosure and said it will be recorded in the minutes of this meeting and the completed form will be filed with the Attorney General and Auditor General. Chairperson Peterson asked if there were any questions; there were none.

ITEM 5. WAIVER UNDER SDCL CH. 3-23

Mr. Engel said this next item will require board action. He reminded the board that when Vice-Chair Wheeler's contract was entered into (prior to existence of the state statutes), under existing SDSTA policy, there was a disclosure and discussion and determination that it was in the best interest of the SDSTA to enter into the contract. Mr. Wheeler's contract has not been changed since this new law went into effect but Mr. Wheeler and Mr. Engel thought it prudent that Mr. Wheeler provide this disclosure and request for waiver again, both of which are located in the board packet. Mr. Engel noted again that the SDSTA policy is more restrictive than the state law. He suggested a discussion and then for Mr. Wheeler to leave the room (step away from the phone) until a motion is made.

Mr. Engel asked if there were any questions for Mr. Wheeler. Chairperson Peterson asked what is the contract term? It was stated that the contract term continues to January 15, 2019.

Dr. Wilson asked if this subject is a personnel issue and subject to discussion in executive session? Mr. Engel replied by law this discussion is required to be held in public. Mr. Headley pointed out that under this contract Mr. Wheeler is not an SDSTA employee but a private contractor. Under the contract, Mr. Wheeler provides governmental consulting services and fundraising services; he is compensated \$5,000 per month. Mr. Wheeler noted that he was compensated \$10,000 per month the first year of the contract and then discussed with Mr. Headley that the work he was and is providing is not taking as much time. He said compensation was reduced to \$5,000 per month thereafter.

Mr. Engel then asked Mr. Wheeler to step away from the phone and asked if there were any questions on this topic.

Mr. Wheeler excused himself from the meeting at 8:17am.

Dr. Wilson said he is unfamiliar with consulting rates and asked how Mr. Wheeler's original dollar amount was determined. Chairperson Peterson said Mr. Wheeler's rate was determined based on his compensation as a former SDSTA employee. Mr. Headley also said it was determined commensurate to time spent on SDSTA business each month. Dr. Wilson made clear Mr. Wheeler plays a valuable role and his compensation is reasonable. Dr. Wilson said the question is for his edification on compensation for state employees. Chairperson Peterson said for comparison, the SDSTA advocacy firm, Lewis-Burke Associates, charges \$250,000 per year and Mr. Headley said Mr. Wheeler is involved in many of the same projects as Lewis-Burke Associates.

Motion by Mr. Christen and second Dr. Wilson to find the terms of the contract are fair and reasonable and in the public interest and to grant the waiver under SDCL CH. 3-23 for Mr. Wheeler. Motion passed unanimously.

Mr. Wheeler rejoined the meeting at 8:23am after the motion was made.

ITEM 6. REPORT FROM AUDIT COMMITTEE

SDSTA Board member and Audit Committee Chair Pat Lebrun reported that the audit committee met by telephone on August 21 but she had technical difficulty and was unable to join the meeting. She was briefed after the teleconference but asked Mr. Christen to provide an update to the board since he headed the meeting in her absence. Mr. Christen said he met with SDSTA Chief Financial Officer Ms. Nancy Geary and the auditor from the Department of Legislative Audit. He said the auditor is doing a good job and said the report would be ready for the December board meeting. Ms. Lebrun concurred and said the Audit Report would be reviewed at the December board meeting and approval would be requested at the March 2018 board meeting.

Chairperson Peterson questioned why Auditor Al Schafer said after this year the audit would go into a three-year rotation? Was it based on the rules for single audit of federal funds? Mr. Christen and Ms. Lebrun responded "yes".

Chair Peterson thanked the Audit Committee for holding the meeting and the time involved.

ITEM 7. FINANCIAL REPORT

SDSTA Chief Financial Officer Ms. Geary said the August Financial report was included in the board packet and she said she also distributed copies of the SDSTA Annual Financial Report (compilation) dated June 30, 2017 to board members physically present at the meeting. She asked if the board would review and comment on the report by next week as time is limited to complete the audit. Ms. Geary said she would contact Chairperson Peterson directly. She then answered questions about the August Financial report.

Chairperson Peterson asked why there was a decrease in pension deferred inflows as he read the explanation but it was still unclear? Mr. Engel said his understanding is that there have been systematic changes within the South Dakota Retirement System (SDRS) as state employees are retiring faster than they have in the past. There was also comment about changes to formulas and additional liabilities. After much discussion, Ms. Geary said she would follow up with the state and provide a clearer explanation to Chairperson Peterson prior to the December meeting.

Ms. Geary said she also distributed a copy of a letter to board members from the SD Investment Council in regard to interest proration. Ms. Geary said the council is projecting a 1.25% rate for fiscal year 2017, payable in fiscal year 2018. The SDSTA projected 1% last year and the actual rate was 1.35%. She asked if the board would like to change the interest rate based on the Investment Council's projections. Chair Peterson said he does not see any reason to change it from the 1%. All Board members concurred.

Motion by Mr. Christen and second Ms. Lebrun to continue the interest earning accrual at 1% for fiscal year 2017. Motion passed unanimously.

Ms. Geary then referred to the Fiscal Year End 2017 Inventory Listing or fixed asset report included in the board packet. She said depreciated and non-depreciated items are included along with listed assets which are government property. She noted that all the property has been assigned to Fermilab since the contract was transferred from Lawrence Berkeley National Lab prior to fiscal year-end.

Ms. Geary then discussed the Fiscal Year End 2017 Per Diem Listing. Mr. Wheeler noted that when he signed his consulting contract with SDSTA, he made a deliberate decision to decline per diems and that is why his name is not included on the list.

Motion by Ms. Lebrun and second by Mr. Christen to accept the financial report as presented. The motion passed unanimously.

ITEM 8. REPORT FROM THE EXECUTIVE DIRECTOR

ITEM 8A. SDSTA Update

Mr. Headley began with a slide presentation and discussed safety performance and said there have been four recordable injuries for SDSTA employees for 2017 which is a reasonable number but it is certainly higher than the SDSTA would like it to be. He said the SDSTA is making some changes to the safety programs to address lessons learned that have manifested from the recent safety incidents. He said the Environment, Safety and Health (ESH) Director position has been posted and there have been good resumes. An ESH candidate will be interviewed on site in early October and perhaps a few more later in October. Mr. Headley said the SDSTA has engaged a headhunting firm that does numerous work with ESH-related hires and resumes being sent from the firm are quite good.

Mr. Headley went on to discuss current science at the Davis Campus and said the Large Underground Xenon (LUX) detector has been relocated to the SLHVC. In regard to the Majorana Demonstrator (MJD), 1) Experiment, operations and commissioning continues and he expects them to operate out until 2019, but MJD has largely shifted to discussions about a next generation experiment. The SDSTA should hear formally from MJD in the form of a science paper on their background observations and whether the 4850L would be deep enough. He said he has heard that there are other experiments around the world interested in electroformed copper and this could be a growth area for MJD if additional funds can be secured. He said electroforming has been completed and they are now standing up electroforming vats in the Davis Campus in preparation for the next generation experiment. 2) He said initial testing has been completed for the radon-reduction system for the main shield purge system. 3) Decommissioning advances at the Ross Campus, with additional hardware continuing to be transported to the Davis Campus.

An initial operations event was held on July 12 for Compact Accelerator for Performing Astrophysical Research (CASPAR). Mr. Headley thanked those board members in attendance. He also said work advanced on the gas target and is expected to be ready in late fall.

The Black Hills State University Underground Campus (BHUC) continued low-background counting of the photomultiplier tubes for the LZ experiment and they have added a new low-background counter.

The Long Baseline Neutrino Facility (LBNF) groundbreaking on July 21 was a great success. Fermilab has secured a contract manager/general contractor (CM/GC) Kiewit Alberici Joint Venture and a kickoff meeting was held here in late August. The Rock conveyor system is under contract with North Alabama Fabricating Company, which is designing and fabricating the pipe conveyor. The conveyor will be installed by the CM/GC.

Final design for LBNF is set to commence soon. The current design contracts held by the SDSTA with Arup are being assigned to Fermilab.

Mr. Headley said FY2018 budget marks still look promising at around \$80M, but we are operating on a three-month continuing resolution. He said the United Kingdom announced an \$88M (£65M) commitment towards the Deep Underground Neutrino Experiment (DUNE). The Fermilab website included this recent news as well as the Whitehouse.gov website. He said it is great to see strong support from the Administration for this experiment. Mr. Michael Kratsios, Deputy Chief Technology Officer and Deputy Assistant to the U.S. President, attended the LBNF groundbreaking event and has been talking about how important this project is for the United States.

Beneficial occupancy on the remodeled surface facility was achieved a few months ago for the LUX-ZEPLIN (LZ). The LZ collaboration meeting was held at Sanford Lab on July 17-22 and 95 members attended. The underground infrastructure design for modifications in the Davis Campus is nearing completion and drawings were reviewed this week. They are expected to go out for bid the first week of October and begin work in December 2017. Mr. Headley said that work would be completed by May 2018.

The Ross Shaft rehabilitation project has progressed to the brow of the 4850L; however, the sets are taking longer to install because the set design is more complex in this area. Mr. Headley said in the past, a set and a half or sometimes two were installed each week but in this area, it will most likely be one set per week. He said it is projected that steel installation would be completed in the May 2018 timeframe which has been pushed out from this calendar year. He noted a new spill collection system is being installed which allows any rock that goes down the shaft to be collected. This rock needs to be managed, collected and disposed.

The Cultural Advisory Committee (CAC) met on September 14 and he thought the meeting went very well. Mr. Headley said the committee is impressed with progress being made with the E&O and tribal school outreach. He said the Communications and E&O Departments are working together on a 4-5-minute video about the lab being a sacred site to the Native Americans and that it should be treated with respect. Mr. Headley said Communications Director Ms. Constance Walter is committed to completing the video by the end of October. He announced the SDSTA is also moving forward with an ethnobotany site west of the parking lot; design options are being discussed. Mr. Headley said the committee would like to see the SDSTA hire a more diverse workforce. The SDSTA has made strong effort to find applicants from the Native American community in the region but has not been successful as we would like. Efforts continue and the committee recognizes the SDSTA commitment. Ms. Lebrun said she was impressed with the E&O progress and that the curriculum units are very interesting. She said the key is to get the units into all the school districts across the state and said the E&O team is doing a great job. Chairperson Peterson asked how many members are on the CAC? Cultural Diversity Coordinator Mr. KC Russell replied there are seven.

Mr. Headley then said Neutrino Day was great and approximately 1,300 came to the event.

In regard to water inflow controls, he said the connection of the borehole from the 1850L to 2000L and a pipeline out to the No. 5 Shaft has been completed to manage large rain events. There has been a change to divert water on a routine basis from the 2000L down to the sump on the 2450L. He said about a third of the water is going to the 2450L sump instead of all way down to the bottom of the underground, and it is saving about \$60,000 to \$70,000 each year on power cost with this change.

Ground support installation is continuing and the crew is focusing on getting all tunnels bolted between the Ross and the Yates Shafts and the Triangle in the next month. He said the crew is also installing a dewatering line between the Ross and the Yates Shaft. Mr. Headley said while this work has been going

on, the Information Technology (IT) team has done a great job of replacing equipment originally purchased when operations first started that is now at the end of its life. The servers and network equipment were replaced without any interruptions to operations. The IT team on site are three people and they have done a wonderful job.

In July, the Sanford Lab had a visit from Mr. Mark Zuckerberg and continues to get good feedback about his visit.

ITEM 8C. Sanford Lab Homestake Visitor Center (SLHVC) Update

Mr. Headley introduced SLHVC Executive Director Ms. Billi Bierle who began her presentation with the new LUX detector display. She said it has been a great addition. She thanked Creative Services Developer Mr. Matt Kapust for working on a touch screen that sits on an iPad next to the detector.

Ms. Bierle said the new SLHVC sign looks very good and has received great compliments. She said it has helped a tremendous amount. Plants will be added around the base of the sign also. A new, taller fence has been installed by the Davis Tribute Ring to address security and safety. In addition, she said a new rock sample with gold is now being displayed with great interest from visitors. Visitors are staying approximately 25 minutes longer and bus tours are staying an additional 15 minutes with the new additions.

As of August 31, the SLHVC hosted 46,708 visitors compared to 42,000 visitors in 2016; 162 tour buses in 2016, projecting 200 buses in 2017; 5,000 trolley guests in 2017, up 24% from 2016. On social media, the SLHVC overall is up 25%—3,100 followers on Facebook, 350 followers on Instagram and averaging 80 new users per day on the SLHVC website for the summer. She said revenue is up 23% and Buffalo Round-Up is next week and that event has been their biggest week in the past.

SLHVC goals: Increase trolley tours to 9,000 in 2018; increase visitors to 90,000 in 2018 followed by 100,000 visitors in 2019; enhance educational reach with a new trolley and an additional staff member dedicated to education in 2019; install two additional interactive exhibits aimed toward middle school- and high school-aged children by 2019; become 100% financially self-sufficient by 2019; retire all existing debt by 2020.

Ms. Bierle asked if there were any questions and the board members said she is doing a great job. She encouraged everyone to provide new ideas for the visitor center. She commented that the new location of the Lotus Up coffee shop and the Black Hills Mining Museum are also doing well and she is encouraged because the more they do well, so does Lead.

ITEM 8D. Education & Outreach (E&O) Update

Ms. Dahl began her presentation reviewing student impact by numbers. During the 2016-2017 school year, 602 students visited the lab, 8,513 presentations were given to classrooms, and 3,408 curriculum units were distributed. Ms. Dahl said over the past year, the E&O Department has added two new staff members which has enabled them to create additional curriculum units. Also, in the summer of 2017, 54 teachers attended a workshop (held at BHSU and Sanford Lab).

Ms. Dahl discussed summer highlights including the GEAR UP Summer Honors Camp, Hill City Summer Science program, Meade County Fair, SD Solar Eclipse Balloon Team (which was not only exciting but a huge success), Summer Teacher Workshop, Revisions of the new materials and Research and Development of new field trip activities. Chairperson Peterson asked how many school districts have not participated in the curriculum units and Ms. Dahl replied there are 149 districts and the E&O has 42 percent they are working to contact. She noted the E&O team has visited or sent curriculum units to many counties in the larger districts that are not reflected in the count. E&O is exploring options for wider distribution of their educational resources.

Ms. Dahl then introduced Dr. Bundy who announced two new field trip activities that are being piloted for students visiting the Sanford Lab. The first activity is called the “Cavern Excavation Challenge” and she said they are trying to tie it to the new caverns that have to be excavated underground for the DUNE experiment. She said the two new activities are engineering design challenges and are fun activities to get materials into children’s hands and ask them to solve a problem. Dr. Bundy said this helps them explore materials and ask questions about science. Mr. Headley said CAC members participated in this activity at their meeting and enjoyed it.

Dr. Bundy said the second activity is called the “Needle in a Haystack” based on the MJD experiment. In this activity, students discover how scientist utilize the background reduction and background rejection in their quest to detect neutrinoless double beta decay using a ketchup bottle, BBs, cloth mesh and other small gadgets. Dr. Wilson interjected that a part of the DUNE group analyzes and filters data and this is a perfect analog to what the experiment does.

Looking forward, Ms. Dahl said E&O would like to develop one new high school curriculum unit; develop one performance task for digital delivery (expand the E&O reach to more areas in SD and beyond the borders); develop and deliver web-based professional development for teacher across SD; provide classroom support and mentoring for teachers; and reach out to untouched school districts in SD.

Mr. Headley then discussed Item 8B that was initially skipped.

ITEM 8B. Declaration of Surplus Property

Mr. Headley reported that the SDSTA has two 30,000-gallon diesel tanks that were located on the Ellison Property and those items are no longer needed. He said the SDSTA is currently seeking bids for the tanks. Chairperson Peterson asked how much fuel storage is available on-site. Mr. Headley said he will confirm how much storage is on the surface.

Chair Peterson asked about several underground tours that were provided in the last month including the CBS News tour. Ms. Walter said CBS News had asked if they could do a story on the transition from a mining town to a world-leading research facility. The Communications team escorted the film crew underground and facilitated interviews with staff and researchers. CBS News also filmed the SLHVC/Open Cut and the Mayor of Lead Ron Everett. She said the story will most likely air in the next six weeks and she would keep the board informed. Ms. Walter said CBS News marveled at the facility and said the SDSTA staff were very gracious. She said the story grew out of the LBNF groundbreaking event in July and the Sanford Lab is getting much interest from national and internationally press.

Mr. Headley then addressed the SD Homeland Security tour and said the SDSTA has had a relationship with them and Federal Bureau of Investigation (FBI) for many years and with the level of attention the lab has received, Mr. Headley said they would like to continue a strong relationship. SD Homeland Security held a regional conference in the area and that is the reason the SDSTA provided an underground tour a few days ago.

In regard to the Defense Intelligence Agency (DIA), Mr. Headley said they had contacted the SDSTA through MJD. He reported the DIA has a Facility Assessment Division that observes and studies facilities around the world. They were onsite at Sanford Lab for two days to learn and ask questions about operations, challenges and construction of the lab.

Motion by Mr. Wheeler and second by Mr. Christen to accept the executive director’s report as presented. Motion passed unanimously.

ITEM 9. REVIEW UPDATED SDSTA LEAVE POLICY

Mr. Headley briefly discussed changes to the Leave Policy. He said recently there were two former employees that had taken more sick leave than seemed appropriate once they notified the SDSTA they were resigning. There is now a provision in the policy stating that if an employee gives notice of resignation and uses any sick leave during the notice period, a doctor's note will be required before the employee is compensated for that time. The policy had been reviewed by Mr. Engel.

Motion by Ms. Lebrun and second by Mr. Christen to approve the updated Leave Policy as presented. The motion passed unanimously.

ITEM 10. EXECUTIVE SESSION

Motion by Dr. Wilson and second by Mr. Wheeler to enter into executive session to discuss personnel matters and to consult with legal counsel concerning contractual matters. Motion passed unanimously.

The board recessed at 9:38 AM for a break and Executive Session and then reconvened at 10:53 AM.

ITEM 11. REPORT FROM EXECUTIVE SESSION

Chairperson Peterson reported that the board consulted with legal counsel concerning contractual and legal matters and personnel matters. No action was taken.

Motion by Mr. Christen and second by Ms. Lebrun to approve the executive session report. Motion passed unanimously.

ITEM 12. CONFIRM DATE AND TIME OF NEXT MEETING

Chairperson Peterson announced the next board meeting is scheduled for Thursday, December 14, 2017 at 9:00 AM (MT) and said a lunch will be provided following the meeting.

He said Administrative Services Manager Ms. Mandy Knight will poll the board for the 2018 board meeting schedule prior to the December meeting. Please take the time to give her some feedback on what works with individual schedules.

ITEM 13. BOARD COMMENTS

Dr. Wilson said it was a great report and enjoyed learning more about the E&O and thanked the SDSTA staff.

Mr. Wheeler said he is absolutely thrilled with the advancements being made in E&O and Ms. Bierle is doing great job at the SLHVC. He commended Mr. Headley for an outstanding job and kudos to the whole SDSTA staff.

Dr. Puszynski said the Neutrino Day event in July was wonderful. In regard to the SDSM&T, he said Dr. Andre Petukhov, Physics Department Head, has stepped down and Dr. Richard Schnee has accepted the open position. Also, Researcher and Associate Professor Dr. Rajesh Sani has received a \$6M National Science Foundation grant for studying microbes. Lastly, Dr. Puszynski said he was proud to announce the first PhD in Physics student graduated from SDSM&T and is expecting many more to come.

Ms. Lebrun said it was another great meeting and reiterated the other board members' comments. Ms. Lebrun said during the CAC meeting held last week, members toured the Waste Water Treatment Plant (WWTP) and said it was absolutely amazing compared to the initial set up ten years ago. She said WWTP Foreman Mr. Ken Noren provided a great tour and said his team keeps the WWTP immaculate. Ms. Lebrun encouraged other board members to tour the WWTP. She said it again speaks to the

complexity of this operation. Chairperson Peterson thanked Ms. Lebrun for serving as a member on the CAC.

Mr. Christen said it was a great meeting and, as echoed by the other board members, is impressed with the E&O progress and success of the SLHVC. He also thanked Ms. Geary and her staff. He said the audits and reports the board receives are good, well designed and arrive on time.

Mr. Engel briefly reported the State of South Dakota was instrumental in setting up three separate captives, one of which provides insurance for the SDSTA, which initiatives have garnered nationwide attention. As a result, the SD Bureau of Administration Office of Risk Management Director Mr. Craig Ambach and Mr. Engel were invited to speak at the State Risk and Insurance Management Association (STRIMA) Conference in Big Sky, Montana earlier in the week and they were well received.

Mr. Headley thanked Ms. Knight for supporting the board meeting and keeping the SDSTA Board organized. He also thanked the SDSTA staff for the work they are doing and said it is a pleasure working with the board and thanked them for their time.

Mr. Peterson said it is amazing how efficient the SDSTA has become and gave kudos to Mr. Headley, the SDSTA team and the board and said he really appreciates everyone. He reminded the board to read through the Audit Compilation that was distributed today and to provide input to Ms. Geary as soon as possible. He said he is looking forward to the December meeting.

ITEM 14. ADJOURN

Chairperson Peterson asked if anyone had any other questions or comments, then called for a motion to adjourn.

Motion by Ms. Lebrun and second by Mr. Christen to adjourn. Motion passed unanimously.

Meeting adjourned at 11:03AM.

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Disclosures and Waivers Under SDCL CH. 3-23—Mr. Tim Engel

Recommended Action:

No action

or

Motion to grant waiver or decline to grant waiver.

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Report from Audit Committee—Ms. Pat Lebrun

- 6A. SDSTA Audit Committee Meeting Minutes October 25, 2017, attached.
- 6B. Final SDSTA Audit Report-Fiscal Year Ended June 30, 2017, attached.

Recommended Action:

Motion to accept Audit Committee Report and to request Audit Report approval at the next regularly scheduled board meeting per statute.

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SDSTA Audit Committee Meeting

October 25, 2017

Participants:

Ms. Pat Lebrun – SDSTA Board of Director/Audit Committee Chair

Mr. Paul Christen – SDSTA Board of Director/Audit Committee Member

Mr. Al Schaefer, SD Department of Legislative Audit, Auditor-in-Charge

Ms. Nancy Geary, SDSTA Chief Financial Officer

A closeout audit teleconference was held today with discussions on the following:

1. Greetings were exchanged and Mr. Schaefer relayed that there were no formal or proposed adjustments. The audit started about a month earlier than usual. Therefore, we began the audit with draft statement information. Some changes were made to the pension information as well as some wording changes. SDSTA Board Chair Casey Peterson's changes were implemented as well as some small adjustments so all schedules footed and cross-footed.
2. The final audit report should be out the week of Oct. 30, 2017 and mailed to SDSTA. This will be in time to present at the December 2017 meeting for approval at the March 2018 meeting.
3. One finding was listed on the Master Lead Schedule of Comments: See the attached. "A physical observation of the xenon gas stored as SLAC is not performed at least once a year on a surprise basis." It is recommended that someone independent of SLAC conduct a physical observation of the xenon stored there. This could be one of SDSTA's employees or perhaps someone from Berkeley (Dr. Murdock Gilchriese). This was discussed and it was agreed that we should develop a procedure to verify the xenon once a year with a surprise visit. This should be reported to the Board once a year. For this year, Mike Headley will be able to inventory the xenon when he visits there in November.
4. Ms. Lebrun noted that the audit report states "Accordingly, we do not express an opinion on the effectiveness of the Authority's internal controls." Ms. Lebrun asked if there had ever been an audit specifically on our internal controls. There has not been a specific audit for this purpose. Extensive testing on our controls would need to occur which would require more audit time and more time from SDSTA staff including the governing board. Under current government auditing standards, the SD Dept. of Legislative Audit is not required to test controls sufficient enough to issue an opinion on controls. However, they do consider the controls in place in determining the extent and time of their testing of transactions to issue an opinion on the financial statements. They would have to report any items that they felt were material weaknesses or significant deficiencies in internal controls. Ms. Geary noted that Fermilab had conducted an internal audit in early 2017 that related to our Accounting, Procurement/Property Management, and Information Technology Dept. It was noted by Ms. Lebrun that the subject of internal control would be an item that they would take up in Executive Session at the next Board Meeting.
5. In summary, the audit went as planned and was completed about a month ahead of last year. Ms. Lebrun and Mr. Christen thanked Mr. Schaefer, Ms. Geary and staff for their support in completing the audit in a timely fashion.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

AUDIT REPORT

Fiscal Year Ended June 30, 2017



**State of South Dakota
Department of Legislative Audit
427 South Chapelle
% 500 East Capitol
Pierre, SD 57501-5070**

SOUTH DAKOTA SCIENCE & TECHNOLOGY AUTHORITY
AUTHORITY OFFICIALS
June 30, 2017

Board of Directors:

Casey Peterson, Chairman
Dana Dykhouse, Vice-Chairman
Ron Wheeler, Vice-Chairman
Pat Lebrun, Secretary/Treasurer
Dr. Robert Wilson, Member
Dr. Ani Aprahamian, Member
Paul Christen, Member
Dr. Jan Puszynski, Ex-Officio Member

Executive Director:

Michael Headley

Chief Financial Officer:

Nancy Geary

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY
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427 SOUTH CHAPELLE
C/O 500 EAST CAPITOL
PIERRE SD 57501-5070
(605) 773-3595

MARTIN L. GUINDON, CPA
AUDITOR GENERAL

**INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER
FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS
BASED ON AN AUDIT OF FINANCIAL STATEMENTS
PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS**

The Honorable Dennis Daugaard
Governor of South Dakota

and

Board of Directors
South Dakota Science and Technology Authority

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of the South Dakota Science and Technology Authority (Authority), a business-type activities component unit of the State of South Dakota, as of and for the year ended June 30, 2017, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements and have issued our report thereon dated October 25, 2017.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Authority's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. *A material weakness* is a deficiency, or combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the Authority's financial statements will not be prevented, or detected and corrected on a timely basis. *A significant deficiency* is a deficiency, or combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standard*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose. As required by South Dakota Codified Law 4-11-11, this report is a matter of public record and its distribution is not limited.



Martin L. Guindon, CPA
Auditor General

October 25, 2017



427 SOUTH CHAPELLE
C/O 500 EAST CAPITOL
PIERRE SD 57501-5070
(605) 773-3595

MARTIN L. GUINDON, CPA
AUDITOR GENERAL

**INDEPENDENT AUDITOR'S REPORT ON COMPLIANCE FOR EACH MAJOR FEDERAL PROGRAM
AND REPORT ON INTERNAL CONTROL OVER COMPLIANCE REQUIRED BY THE UNIFORM
GUIDANCE**

The Honorable Dennis Daugaard
Governor of South Dakota

and

Board of Directors
South Dakota Science and Technology Authority

Report on Compliance for Each Major Federal Program

We have audited the South Dakota Science and Technology Authority's (Authority), a business-type activities component unit of the State of South Dakota, compliance with the types of compliance requirements described in the *U.S. Office of Management and Budget (OMB) Compliance Supplement* that could have a direct and material effect on each of the Authority's major federal programs for the year ended June 30, 2017. The Authority's major federal programs are identified for the State of South Dakota Single Audit and included in the summary of auditor's results section of the accompanying Schedule of Current Audit Findings and Questioned Costs.

Management's Responsibility

Management is responsible for compliance with federal statutes, regulations, contracts, and grants applicable to its federal programs.

Auditor's Responsibility

Our responsibility is to express an opinion on compliance for each of the Authority's major federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. *Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the Authority's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for each major federal program. However, our audit does not provide a legal determination on the Authority's compliance.

Opinion on Each Major Federal Program

In our opinion, the Authority complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended June 30, 2017.

Report on Internal Control Over Compliance

Management of the Authority is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Authority's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control over compliance.

A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. *A material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. *A significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Purpose of this Report

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purposes. As required by South Dakota Codified Law 4-11-11, is a matter of public record and its distribution is not limited.



Martin L. Guindon, CPA
Auditor General

October 25, 2017

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY
SCHEDULE OF PRIOR AND CURRENT AUDIT FINDINGS AND QUESTIONED COSTS

SCHEDULE OF PRIOR AUDIT FINDINGS

Prior Federal Audit Findings:

The prior audit report contained no written federal audit findings.

Prior Other Audit Findings:

The prior audit report contained no written other audit findings.

SCHEDULE OF CURRENT AUDIT FINDINGS AND QUESTIONED COSTS

Summary of the Independent Auditor's Results:

Financial Statements

- a. An unmodified opinion was issued on the financial statements.
- b. No material weaknesses or significant deficiencies were disclosed by our audit of the financial statements.
- c. Our audit did not disclose any noncompliance which was material to the financial statements.

Federal Awards

- d. An unmodified opinion was issued on compliance with the requirements applicable to major programs.
- e. Our audit did not disclose any audit findings that are required to be reported in accordance with 2 CFR 200.516(a).
- f. The federal awards tested as major programs were:
 - 1. 81.629760 SURF (Sanford Underground Research Facility) Operations Support
 - 2. 81.630223 SURF (Sanford Underground Research Facility) Ross Shaft Rehab
- h. The dollar threshold used to distinguish between Type A and Type B federal award programs was \$7,000,000 as determined for the State of South Dakota Single Audit for fiscal year 2017.
- i. The South Dakota Science and Technology Authority, as a component unit of the State of South Dakota, did not qualify as a low-risk auditee.

Current Federal Audit Findings:

There are no written current federal compliance audit findings to report.

Current Other Audit Findings:

There are no written current (other) audit findings to report.



427 SOUTH CHAPELLE
C/O 500 EAST CAPITOL
PIERRE SD 57501-5070
(605) 773-3595

MARTIN L. GUINDON, CPA
AUDITOR GENERAL

INDEPENDENT AUDITOR'S REPORT

The Honorable Dennis Daugaard
Governor of South Dakota

and

Board of Directors
South Dakota Science and Technology Authority

Report on the Financial Statements

We have audited the accompanying financial statements of the South Dakota Science and Technology Authority (Authority), a business-type activities component unit of the State of South Dakota, as of and for the year ended June 30, 2017, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements as listed in the Table of Contents.

Management's Responsibility for the Financial Statements

The Authority's management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal controls relevant to the preparation and fair presentation of financial statements that are free from material misstatements, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Authority's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Authority as of June 30, 2017, and the changes in its financial position and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis (MD&A) on pages 8-15, the Schedule of Proportionate Share of the Net Pension Liability (Asset) on page 33, and the Schedule of Employer Contributions on page 34 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Authority's basic financial statements. The Schedule of Operating Expenses and the Schedule of Expenditures of Federal Awards, which is required by Title 2 U.S. *Code of Federal Regulations (CFR) Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) listed in the Table of Contents are presented for purposes of additional analysis and are not a required part of the basic financial statements. The information is the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the basic financial statements as a whole.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated October 25, 2017 on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements, and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control over financial reporting and compliance.



Martin L. Guindon, CPA
Auditor General

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS JUNE 30, 2017

This section of the South Dakota Science and Technology Authority's (Authority) annual financial report presents management's discussion and analysis of the Authority's financial performance during the fiscal year ended June 30, 2017 (FY 2017). This analysis should be read in conjunction with the financial statements and notes to the financial statements.

The Authority's financial statements include the operations of funds that the Authority has established to achieve its goal of converting its acquired Homestake Mine property into an underground science and engineering laboratory. The property was donated to the Authority by Barrick Gold Corporation in May 2006.

The activity of the Authority is accounted for as a proprietary fund type. The Authority is a component unit of the State of South Dakota and its financial statements are included in the Comprehensive Annual Financial Report of the State of South Dakota.

Included in the financial statements presented is a current year comparison to prior year balance sheet summary, revenue and expense summary, and capital assets. Further reports reflect current year detailed statement of net position, statement of revenue, expense and changes in net position, cash flow and schedule of operating expenses, and schedule of expenditures of federal awards. Comparisons of current year to prior year are important to display increases and decreases in various elements of the financial reports for the Authority. Current year detailed reports provide significant detail for statement of net position, revenues, expenses and cash flows for the Authority.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED) JUNE 30, 2017

FINANCIAL HIGHLIGHTS:

- Total assets at year end decreased to \$110,994,820.
- Current Assets decreased by \$2,151,545, primarily due to the expenditure of funds from the cash accounts being held by the State Treasurer on behalf of the Authority. Accounts Receivable as of the June 30, 2017 statement is also lower due to receiving payments on various invoices earlier than usual.
- Capital Assets increased by \$117,873 net of depreciation expense. Page 12 details the major capital asset additions and deletions. Furthermore, page 23 summarizes the changes in capital assets by major categories. Notable increases include the purchase of the Ellison Hill Property which includes land, buildings, and infrastructure as well as additional increases to Improvements in Progress for the LUX/Zeplin facility upgrades. Deletions include various computer equipment that had reached end of life status.
- Net Pension Asset and Xenon Purchased are combined on our Statement of Net Position. Net Pension Asset decreased to zero. The State's retirement system (SDRS) is no longer fully funded (see Note 6 – page 25). The actuarially accrued liability of the fund is more than the assets of the fund. Therefore, for fiscal year 2017 we have a Net Pension Liability. GASB standards allow entities to use a pension measurement date up to one year prior to the entities reporting period. Therefore, the Authority is using a June 30, 2016 pension measurement date for our fiscal year end June 30, 2017 statements. Loans from the South Dakota Community Foundation, University of South Dakota Foundation, and South Dakota State University Foundation have enabled the Authority to purchase xenon to be used in the future LZ experiment. As of June 2017, \$5,040,356 of xenon has been purchased. In summary, the Net Pension Asset and Xenon Purchased has increased by \$1,275,265.
- Deferred Outflows of Resources is also related to our retirement plan with SDRS. The amounts recorded relate to our proportionate share of the differences between expected and actual experience in pension earnings along with the Authority's pension contributions made subsequent to June 30, 2016. The total Deferred Outflows of Resources equals \$4,174,730.
- Total liabilities at year end increased to \$9,434,801, primarily due to the additional liability created by the signing of additional loans with the University of South Dakota Foundation and the South Dakota State University Foundation for additional xenon purchases. \$1,000,000 was received from each foundation. These loans are eleven year, unsecured nonrecourse loans with 2.5% simple interest to be paid quarterly to the lender. The loans will be repaid at the end of the LZ experiment (estimated to be October 2026) from the sale proceeds of the xenon previously purchased. Net Pension Liability is recorded at \$1,698,193 for the Authority's share of the collective net pension liability. Last year's calculation showed the retirement system was 104% funded where this year it is only 96% funded.
- Deferred Inflows of Resources has been reduced to zero for fiscal year 2017. GASB 68 requires that the amount reported as deferred outflows and inflows as they relate to the net difference between the projected and actual earnings on pension plan investments should be netted for reporting purposes. The recorded amounts have been summarized with Deferred Outflows of Resources.
- Total restricted net position decreased to \$15,278,125, partially due to the expenditure of funds received from Mr. Denny Sanford. These funds were expended on the purchase of the Ellison Hill Property as authorized by the Sixth Amendment to the Homestake Gift Agreement. This additional surface property will provide storage and construction material laydown space for the Long-Baseline Neutrino Facility (LBNF) and the Deep Underground Neutrino Experiment (DUNE). Additionally, restricted net position decreased for funds related to pension benefits as well as experiment funding set aside for xenon procurement, the related interest payments for xenon procurement loans, and infrastructure upgrades.
- Unrestricted net position increased to \$5,676,524.
- Total net position at year end decreased to \$105,734,749.
- Charges for Services decreased slightly to \$150,969. Revenue from Homestake decreased due to a decrease in the amount of water being treated and discharged for Homestake.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED) JUNE 30, 2017

FINANCIAL HIGHLIGHTS (Continued)

- Operating Grants increased to \$25,690,909. The revenue received in this classification includes \$17,022,400 received from Fermi National Laboratory, \$8,326,020 from Lawrence Berkeley National Laboratory, and \$342,489 from the SD Governor's Office of Economic Development (GOED) and various smaller universities. As of fiscal year 2017 a larger portion of the Operating Grants funding was received from Fermi National Laboratory rather than Lawrence Berkeley National Laboratory as two contracts for operations support and the Ross Shaft Rehab were transferred to Fermi National Laboratory late in calendar year 2016.
- Capital Grants and Contributions decreased to zero (down \$2,282,782 from the prior year) due to the completion of the Sanford Lab Homestake Visitor Center and the Sanford Science Education Center project at Black Hills State University.
- Other Grants includes \$2,000,000 from GOED for xenon procurement and interest payment expenditures on loan agreements.
- Investment Earnings decreased to \$44,570 compared to \$337,182 in the previous year as average interest rates were lower than the previous year, less funds were being held on behalf of the Authority by the State Investment Council, and decreases to the fair value of securities held.
- Total Program Expenses for the Authority were \$28,755,946 which represents a decrease of 22.74% percent from the previous year. Last year's Program Expenses included the conveyance of the Sanford Lab Homestake Visitor Center to Homestake Visitor Center, Inc. as well as the Sanford Science Education Center project at Black Hills State University which resulted in \$7,344,210 of expense. Furthermore, last year's expenditures included an additional \$2,500,000 which was repurposed from the Indemnification Fund for the Authority to provide initial capital and pay liability coverage expenses associated with a newly formed Captive Insurance Company. This year's expenses include just \$31,355 for additional small items conveyed to the Homestake Visitor Center, Inc. Also included in Total Program Expenses are Operating Expenses which increased by \$1,475,128 to \$28,635,307. Of the total expenses in this category, the major expenses were personal services – 47.8 percent, contractual services – 35.3 percent, and supplies, materials, and other operating expenses – 8.93 percent. The majority of the increase in Operating Expenses is a result of transferring the Ross Rehab costs to a subcontract with LBNL (federal funds through the Department of Energy) as of January 2016. The fiscal year 2016 program expenses only included one half year of Ross Rehab expenses where fiscal year 2017 included a full year of expenses. Prior to January 2016, the costs were being covered by Sanford funds and State funds.
- Net position decreased by \$725,449 for fiscal year 2017.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

JUNE 30, 2017

FINANCIAL STATEMENT ELEMENTS:

NET POSITION

	2017	2016	Dollar Change	Percent Change
Current Assets	\$ 20,967,962	\$ 23,119,507	\$ (2,151,545)	-9.31%
Capital Assets	84,986,502	84,868,629	117,873	0.14%
Net Pension Asset and Xenon Purchased	5,040,356	3,765,091	1,275,265	33.87%
Total Assets	110,994,820	111,753,227	(758,407)	-0.68%
Pension Related Deferred Outflows	4,174,730	4,129,426	45,304	1.10%
Net Pension Liability	1,698,193	-	1,698,193	100.00%
Long-Term Liabilities Outstanding	4,512,117	2,602,661	1,909,456	73.37%
Other Liabilities	3,224,491	3,634,992	(410,501)	-11.29%
Total Liabilities	9,434,801	6,237,653	3,197,148	51.26%
Pension Related Deferred Inflows	-	3,184,802	(3,184,802)	-100.00%
Net Position:				
Net Investment in Capital Assets	84,780,100	84,524,475	255,625	0.30%
Restricted	15,278,125	18,208,604	(2,930,479)	-16.09%
Unrestricted	5,676,524	3,727,119	1,949,405	52.30%
Total Net Position	\$ 105,734,749	\$ 106,460,198	\$ (725,449)	-0.68%

CHANGE IN NET POSITION

	2017	2016	Dollar Change	Percent Change
Revenues				
Program Revenues:				
Charges for Services	\$ 150,969	\$ 247,502	\$ (96,533)	-39.00%
Operating Grants	25,690,909	24,889,116	801,793	3.22%
Miscellaneous	144,049	72,291	71,758	99.26%
Capital Grants and Contributions	-	2,282,782	(2,282,782)	-100.00%
Other Grant Revenue	2,000,000	2,000,000	-	0.00%
General Revenues:				
Investment Earnings	44,570	337,182	(292,612)	-86.78%
Total Revenue	28,030,497	29,828,873	(1,798,376)	-6.03%
Program Expenses:				
Science and Technology Authority	28,755,946	37,220,226	(8,464,280)	-22.74%
Total Expense	28,755,946	37,220,226	(8,464,280)	-22.74%
Change in Net Position	(725,449)	(7,391,353)	6,665,905	-90.19%
Net Position-Beginning	106,460,198	113,851,551	(7,391,354)	-6.49%
Net Position-Ending	\$ 105,734,749	\$ 106,460,198	\$ (725,449)	-0.68%

By June 30, 2017, the Authority had invested \$84,986,502 in a broad range of capital assets, including computer equipment, land, buildings, improvements to infrastructure and the underground, and various machinery and equipment. \$20,551,152 of this \$84,986,502 (approximately 24% of this total value) was donated by Barrick Gold. This amount represents a net decrease (including additions and deductions) of \$117,873, or .14 percent, over the last year.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)
JUNE 30, 2017**

CAPITAL ASSETS (Net of Depreciation)

	2017	2016	Change
Improvements	\$ 31,043,734	\$ 31,977,971	\$ (934,237)
Underground	17,936,956	17,767,956	169,000
Buildings	5,751,477	5,615,700	135,777
Computer Equipment	124,464	76,686	47,778
Equipment	6,714,078	7,056,723	(342,645)
Construction in Progress	19,797,453	19,258,934	538,519
Land	1,814,136	1,579,298	234,838
Infrastructure	1,665,601	1,408,819	256,782
Furniture	29,962	34,952	(4,990)
Archive Material	70,000	70,000	-
Auto	38,641	21,590	17,051
Total Capital Assets	\$ 84,986,502	\$ 84,868,629	\$ 117,873

This year's major capital asset additions and deletions included:

Purchased Capital Assets:

Ellison Hill Property	\$ 234,838
Ellison Hill Buildings	282,000
Chevy 2011 3500 Stake Bed Truck	22,657
Snow Plow	6,594
Milliken Plug Valves	15,777
McCrometer MagFlo Meter	6,980
Radon Removal System	421,974
Atlas Copco Air Compressor and Air Dryer	33,725
RO Water System	49,328
FCU-1 Fan	7,557
Computer Equipment - Router, Backup Servers, Firewalls	79,473

Infrastructure Additions:

Ellison Hill Gravel and Paved Road	38,951
Water Inflow Phase I and Pipe Fusion	261,669

Improvements (Current Year Additions):

Davis Campus Insulation	45,637
Yates Tunnel Improvements	169,000

Improvements in Progress (Current Year Additions):

CASPAR Experiment Development	76,664
Ellison Hill Building Asbestos Assess./Abatement	26,379
LUX/Zeplin Facility Upgrades	823,146

Computer Equipment (Current Year Deletions)

Router, Backup Servers, Firewalls	(106,106)
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SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

JUNE 30, 2017

LONG-TERM DEBT

At the year-end, the Authority had \$4,512,117 in other long-term obligations. This is an increase of 73.37 percent as shown below.

	2017	2016	Total Dollar Change	Total Percentage Change
Compensated Absences	\$ 495,921	\$ 443,101	\$ 52,820	11.92%
Capital Acquisition Lease	16,196	159,560	(143,364)	-89.85%
Xenon Notes Payable	4,000,000	2,000,000	2,000,000	100.00%
Total Long-Term Debt	\$ 4,512,117	\$ 2,602,661	\$ 1,909,456	73.37%

(1) The Authority is liable for the accrued vacation leave payable to all full-time employees. In addition, the Authority is liable for a portion of the earned sick leave of employees who have been employed for seven consecutive years. The \$52,820 increase in compensated absences is due to an increase in the corresponding amount of leave accumulated and outstanding at the end of the year for various employees. Included in the increase is the xenon notes payable to South Dakota Community Foundation, University of South Dakota Foundation, and South Dakota State University Foundation. Note (4) Long-Term Debt in the Notes to Financial Statements on page 24 details compensated absences, capital lease and the xenon note payable.

ECONOMIC FACTORS

- A report released from the Particle Physics Project Prioritization Panel (P5) in May 2014, outlined the 10-year strategic plan for high-energy physics in the United States. The report provides strong support for science programs envisioned for the Sanford Underground Research Facility (SURF) including research into neutrinos and dark matter, both of which are being researched at Sanford Lab. This panel formally advises both the DOE Office of Science and the National Science Foundation (NSF) on support for physics. We expect this report to play a key role in the federal government funding process for years to come. The Authority is better positioned to receive continued funding for Operations in the future.
- The Authority's Board of Directors approved a capital budget for fiscal year 2017 of \$6,872,095 towards the experiment development for the Compact Accelerator System for Performing Astrophysical Research (CASPAR), as well as xenon procurement for the LZ experiment and upgrades to surface and underground facilities for the future G2-LZ (Generation 2 LUX-Zeplin) experiment. A contract with Dean Kurtz Construction was signed in August 2016 for \$789,466 for upgrades to the surface science lab and the construction of a new radon removal building. With additional change orders, the contract amount was increased to \$843,654. Both projects were substantially completed in fiscal year 2017. Additional projects included the purchase of the Ellison Hill property and Ellison Hill building asbestos abatement. Actual expenditures for the year totaled \$5,478,779. Actual expenses were lower than budgeted as not all projects are complete. Funding for the balance of these projects had been designated primarily from the Sanford funds including a portion of Gift No. 2. Funding for xenon procurement and the upgrades for the LZ experiment was secured with the signing of Letter Agreement #1586 in August 2015 with the Governor's Office of Economic Development (GOED) and through separate funding from Foundations. The total funding of \$6,000,000 has been received from GOED as well as \$4,000,000 from the Foundations. The final \$2,000,000 from Foundations will be received in 2018. Additional details can be found on page 15.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

JUNE 30, 2017

ECONOMIC FACTORS (Continued)

- The operations contract with Lawrence Berkeley National Laboratory (LBNL) has transitioned to Fermi National Accelerator Laboratory (FNAL) as of October, 2016. With various modifications to Subcontract No. 629760 we currently have a budget of \$14,748,459 to manage and operate the facility through September 30, 2017. Actual expenditures were \$12,577,323 through August 2017. Negotiations are underway to extend this contract through June 2018 with additional funding until we are able to negotiate a long-term contract with (FNAL).
- Further funding was received in fiscal year 2017 through LBNL in support of various small projects including the LUX (Large Underground Xenon) experiment. This award reimbursed the Authority for expenses incurred in support of the LUX for various materials and supplies as well as a percentage of the salaries of the Design Team members for their project management skills essential to the work being performed. Other small subcontracts supplied further funding to the Authority. Included was support for the LZ (LUX-Zeplin) investigations. Additional funding was received through LBNL for the Ross Shaft rehabilitation project as well as another small drilling project labeled KISMET. As of mid-December, 2016 the Ross Shaft rehabilitation project transitioned to Fermi National Accelerator Laboratory (FNAL) with the signing of Subcontract No. 630223. This funding will continue with FNAL until the project is complete.
- In late 2012, the DOE approved the Long Baseline Neutrino Experiment (LBNE) to proceed with preliminary designs to construct a large detector at SURF. In October 2014, the United States along with international partners agreed that the Sanford Lab was to remain the host for the LBNE related detectors. After further meetings, the LBNE collaboration officially dissolved and transferred all responsibilities to a new collaboration referred to as the Long Baseline Neutrino Facility (LBNF) consisting of United States and International support. The LBNF and the associated Deep Underground Neutrino Experiment (DUNE) will send neutrinos through the earth from Fermilab in Batavia, Illinois to SURF in Lead, SD. More recent developments (September 2016) involve the DOE formally approving plans for construction of the first two large underground caverns at SURF for DUNE. The first step of installing the systems to transport hundreds of thousands of tons of rock to the surface will begin in 2017. The excavation for the three caverns to house the neutrino detectors and related utilities is expected to begin in the fall of 2018. Contracts have been executed with Fermi National Accelerator Laboratory (FNAL) for these efforts. Funds were received for professional engineering management services for design and construction. Other contracts added support for Phase 2 - Geotechnical Exploration for LBNE. Additional support was received for Excavation Preliminary and Final Design, Building/Site Infrastructure, as well as funding for a tramway excavation, pipe conveyor support, and surface rock handling through final design. DOE support for professional engineering management services continues into fiscal year 2017 for the LBNF project but the large Excavation – Final Design and Building/Site Infrastructure contracts will be held directly by FNAL with the design firm. Thus, these design contracts have come to an end for the Authority. In late September 2017, the United States entered into a historic bilateral agreement with the United Kingdom establishing a foundation for enhanced research partnerships to further world-class science. The United Kingdom has committed \$88 million to LBNF and DUNE.
- Additional funding was received during the fiscal year from various institutions including Oak Ridge National Laboratory, Northwestern University, South Dakota Schools of Mines & Technology, and Black Hills State University. Funds were received at SURF to support the Majorana experiment located at the 4850-foot level Davis Campus, as well as various other experiments on the underground levels. Support continues in fiscal year 2018 from these various universities except Northwestern University that has completed their project.
- A Memorandum of Understanding (MOU) was signed in November 2014 between the Authority and a commercial organization – Xilinx, Inc. to establish an experiment located near the Davis Campus. Their testing measures failure rates and modes in electronic chips. We are charging them for lab space, experiment access fees, and SURF scientific support. This agreement will continue into fiscal year 2018.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONCLUDED) JUNE 30, 2017

ECONOMIC FACTORS (Continued)

- The Authority's fiscal year 2018 capital budget provides for spending \$4,677,160. Projects include concluding the CASPAR experiment development, finalizing the Authority's support for the surface and underground upgrades for the future G2-LZ (Generation 2 LUX-Zeplin) experiment that will be located in the Davis Campus, procurement of xenon for the LZ experiment, as well as asbestos abatement for the newly acquired Ellison Hill property. Funding for the LZ projects will be facilitated through a letter agreement with the Governor's Office of Economic Development (GOED) for \$6,000,000 along with loan agreements for \$6,000,000 from state foundations. Agreements have been signed with the South Dakota Community Foundation, South Dakota State University Foundation, and University of South Dakota Foundation for \$2,000,000 each to be used towards the purchase of xenon. The Authority's Board of Directors also approved a budget of \$537,922 in favor of Authority supported activities.
- A Letter Agreement dated February 24, 2014 between the Authority and Black Hills State University (BHSU) provides up to \$300,000 per year for three years from the Authority to BHSU to administer the Sanford Science Education Center. Matching funds of \$150,000 per year by BHSU is documented. An amended agreement dated June 6, 2017 commits an additional \$275,000 toward education and outreach priorities for the period July 2017 – June 2018. Funding for this agreement originated from a Letter Agreement #1524 between the SD Governor's Office of Economic Development (GOED) and the Authority. The full period of performance extends from June 2014 through May 2017. The first \$300,000 from the Governor's office was received in September 2014 and was extended to BHSU on a reimbursement schedule. Years two and three funding of \$300,000 and \$250,000 were received from GOED. The balance of year three funding of \$50,000 was received in June of 2017. Additional support of \$125,000 per year for four years for education programs was received from Great Plains Education Foundation. Funding will be received upon sending documented support of achievements.
- The Authority is compliant with all legal and environmental regulations.

CONTACTING THE AUTHORITY'S FINANCIAL MANAGEMENT

This financial report is designed to provide our citizens, taxpayers, customers, and investors and creditors with a general overview of the Authority's finances and to demonstrate the Authority's accountability for the money it receives. If you have any questions about this report or need additional information, contact the South Dakota Science and Technology Authority, 630 East Summit Street, Lead, SD 57754.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**STATEMENT OF NET POSITION
JUNE 30, 2017**

ASSETS

Current Assets

Cash in Local Bank and Petty Cash	\$ 1,826,821
Cash on Deposit with State Treasurer	14,187,504
Accounts Receivable	1,878,813
Interest Receivable	46,464
Prepaid Expenses	587,902
Inventory of Supplies & Warehouse	2,440,458
Total Current Assets	20,967,962

Noncurrent Assets

Xenon Purchased	5,040,356
Land	1,814,136
Underground	17,936,956
Improvements in Progress	19,797,453
Buildings, Machinery, Equipment and Infrastructure (Net) (Note 3)	45,437,957
Total Noncurrent Assets	90,026,858

TOTAL ASSETS **110,994,820**

Deferred Outflows of Resources

Pension Related Deferred Outflows	4,174,730
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LIABILITIES

Current Liabilities

Accounts Payable	2,066,947
Accrued Wages and Benefits	471,416
Accrued Leave, Benefits, and Capital Acquisition Lease (Note 4)	686,128
Total Current Liabilities	3,224,491

Long-Term Liabilities

Net Pension Liability	1,698,193
Accrued Leave, Benefits, and Capital Acquisition Lease Net of Current Portion (Note 4)	512,117
Long-Term Xenon Notes Payable (Note 4)	4,000,000
Total Long-Term Liabilities	6,210,310

TOTAL LIABILITIES **9,434,801**

NET POSITION

Invested in Capital Assets	84,780,100
Restricted for:	
Mine Closure	1,411,988
Experiments	3,426,222
Indemnification	7,500,000
Sanford Center for Science Education	463,378
Pension	2,476,537
Unrestricted Net Position	5,676,524

TOTAL NET POSITION **\$ 105,734,749**

The accompanying notes are an integral part of this statement.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION
FOR THE YEAR ENDED JUNE 30, 2017**

Operating Revenue	
Charges for Goods and Services	\$ 150,969
Operating Grants	25,690,909
Miscellaneous	144,049
Total Operating Revenue	25,985,927
Operating Expenses	
Personal Services	13,693,652
Travel	182,579
Contractual Services	10,098,945
Supplies, Materials and Other Operating Expenses	2,564,493
Amortization Expense	137,752
Depreciation Expense	1,957,886
Total Operating Expenses	28,635,307
Operating Loss	(2,649,380)
Nonoperating Revenues/Expenses	
Grant Revenue	2,000,000
Interest Revenue	44,570
Other Expense	(120,639)
Total Nonoperating Revenues/Expenses	1,923,931
Change in Net Position	(725,449)
Net Position -- Beginning of Year	106,460,198
Net Position -- End of Year	\$ 105,734,749

The accompanying notes are an integral part of this statement.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED JUNE 30, 2017**

Cash Flows from Operating Activities:

Other Operating Cash Receipts	\$ 323,274
Cash Receipts from Operating Grants	27,583,372
Cash Payments to Employees for Services	(12,958,628)
Cash Payments to Suppliers of Goods and Services	(13,714,519)
Net Cash Provided by Operating Activities	1,233,499

Cash Flows from Noncapital Financing Activities:

Grant Revenue	2,000,000
Proceeds from Xenon Notes Payable	2,000,000
Xenon Purchases	(2,630,135)
Interest/Insurance Paid on Xenon	(59,282)
Grants & Donations Paid	(31,355)
Net Cash Provided by Noncapital Financing Activities	1,279,228

Cash Flows from Capital and Related Financing Activities:

Purchase of Capital Assets	(2,783,767)
Principal Paid on Capital Debt	(137,752)
Interest Paid on Capital Debt	(8,498)
Net Cash Used in Capital and Related Financing Activities	(2,930,017)

Cash Flows from Investing Activities:

Interest Earnings	38,354
Net Cash Provided by Investing Activities	38,354

Net decrease in Cash and Cash Equivalents **(378,936)**

Cash and Cash Equivalents at Beginning of Year 16,393,262

Cash and Cash Equivalents at End of Year **\$ 16,014,326**

Reconciliation of Operating Loss to Net Cash Provided by Operating Activities:

Operating Loss	\$ (2,649,380)
<i>Adjustments to Reconcile Operating Loss to Net Cash Provided by Operating Activities:</i>	
Depreciation & Amortization Expense	2,095,638
Change in Assets and Liabilities:	
Receivables	1,920,719
Prepaid Expenses	(152,176)
Inventory of Supplies	2,447
Net Pension Asset	2,158,428
Decrease(Increase) in Deferred Outflow of Resources - Pension	(45,304)
Increase (Decrease) Deferred Inflow of Resources - Pension	(3,184,802)
Accounts and Other Payables	(718,773)
Net Pension Liability	1,698,193
Accrued Wages Payable	2,868
Accrued Leave Payable	105,641
Net Cash Provided by Operating Activities	\$ 1,233,499

Continued on next page.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**STATEMENT OF CASH FLOWS (CONTINUED)
FOR THE YEAR ENDED JUNE 30, 2017**

Cash and Cash Equivalents:

Cash in Local Bank	\$ 1,826,771
Petty Cash	50
Cash with State Treasurer	14,187,504
Total Cash and Cash Equivalents	\$ 16,014,325

Non-Cash Capital and Related Financing Activities:

Loss on Disposal of Assets	\$ 1,169
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The accompanying notes are an integral part of this statement.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS JUNE 30, 2017

(1) Summary of Significant Accounting Policies

a. Reporting Entity

The South Dakota Science and Technology Authority (Authority) was created and organized by Chapter 1-16H of the South Dakota Codified Laws. The purposes of the Authority are to foster and facilitate scientific and technology investigation, experimentation, and development by creating a mechanism through which laboratory, experimental and development facilities may be acquired, developed, constructed, maintained, operated, and decommissioned. The initial focus of the Authority is to support the transfer of the Homestake Gold Mine in Lead, South Dakota for development by the research community to become the world's premier Underground Science and Engineering Laboratory; more specifically, the Sanford Underground Research Facility (SURF). Additional focus is maintained by the Authority for an education and outreach program detailing the progress.

The Authority is a business type component unit of the State of South Dakota (the State). As such, the accompanying financial statements are included in the Comprehensive Annual Financial Report of the State of South Dakota.

b. Fund Accounting

The Authority Fund is accounted for as an enterprise fund. Enterprise funds are used to account for operations (a) that are financed and operated in a manner similar to private business enterprises, where the intent of the governing body is that the costs (expenses, including depreciation) of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges; or (b) where the governing body has decided that periodic determination of revenues earned, expenses incurred, and/or net income is appropriate for capital maintenance, public policy, management control, accountability, or other purposes.

c. Basis of Accounting

The Authority Fund follows the accrual basis of accounting. Revenues are recognized when they are earned, and expenses are recognized when they are incurred.

d. Inventory of Supplies

Inventory of supplies consists primarily of expendable equipment/supplies, donated and purchased, not yet in service. Donated inventory of supplies are valued at their estimated fair value on date of donation. Purchased equipment values are reported at cost. Reported cost values include ancillary charges necessary to place the asset into its intended location and condition for use at a later date.

e. Capital Assets

Capital assets include land, buildings, machinery and equipment, and all other tangible or intangible assets that are used in operations and that have initial useful lives extending beyond a single reporting period. Infrastructure assets are long-lived capital assets that normally are stationary in nature and normally can be preserved for a significantly greater number of years than most capital assets.

Capital assets are recorded at historical cost. Donated capital assets are valued at their estimated fair value on the date donated. Reported cost values include ancillary charges necessary to place the asset into its intended location and condition for use. Subsequent to initial capitalization, improvements or betterments that are significant and which extend the useful life of a capital asset are also capitalized.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED) JUNE 30, 2017

(1) Summary of Significant Accounting Policies (Continued)

e. Capital Assets (Continued)

Depreciation of all exhaustible capital assets is recorded as an expense in the Statement of Revenues, Expenses, and Changes in Net Position, with net capital assets reflected in the Statement of Net Position. Accumulated depreciation is reported on the Statement of Net Position.

Capitalization thresholds (the dollar values above which asset acquisitions are added to the capital asset accounts), depreciation methods, and estimated useful lives of capital assets reported in the Authority's financial statements are as follows:

	Capitalization Threshold	Depreciation Method	Estimated Useful Life
Land and Land Rights	All Land	N/A	N/A
Improvements	\$ 5,000	Straight-line	10-50 yrs.
Infrastructure	5,000	Straight-line	25-50 yrs.
Buildings	5,000	Straight-line	25-50 yrs.
Automobiles, Furniture, Machinery and Equipment	5,000	Straight-line	5-75 yrs.

f. Revenue and Expense Classifications

In the Statement of Revenues, Expenses, and Changes in Net Position, revenues and expenses are classified in a manner consistent with how they are classified in the Statement of Cash Flows. That is, transactions for which related cash flows are reported as capital and related financing activities, non-capital financing activities, or investing activities are not reported as components of operating revenue or expenses. The Authority's proprietary fund distinguishes between operating and non-operating revenues and expenses. Operating revenues and expenses of the Authority consist of reimbursement of the costs of operations from Homestake Mining Company and other entities, and the costs of providing those services, including depreciation. All other revenues and expenses are reported as non-operating.

g. Cash and Cash Equivalents

Cash includes cash on hand, demand deposits, and participating interest in the State's internal investment pool held by the State Treasurer. The amount held in the State's internal investment pool is reported at fair value. The Authority essentially has access to the entire amount of their cash resources on demand. Accordingly, equity in the cash management pool is considered to be cash and cash equivalents for the purpose of the Statement of Cash Flows.

h. Equity Classifications

Equity is classified as net position and is displayed in three components:

1. Net investment in capital assets, consists of capital assets, including restricted capital assets, net of accumulated depreciation (if applicable) and reduced by the outstanding balances of any bonds, mortgages, notes, or other borrowings that are attributable to the acquisition, construction, or improvements of those assets.
2. Restricted net position, consists of net position with constraints placed on their use either by (a) external groups such as creditors, grantors, contributors, or laws and regulations of other governments; or (b) law through constitutional provisions or enabling legislation.
3. Unrestricted net position, all other net position that do not meet the definition of "restricted" or "net investment in capital assets."

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED) JUNE 30, 2017

(1) Summary of Significant Accounting Policies (Concluded)

i. Application of Net Position

It is the Authority's policy to first use restricted net position, prior to the use of unrestricted net position, when an expense is incurred for purposes for which both restricted and unrestricted net position are available.

j. Accrued Leave

Compensated absences consist of vacation and sick leave earned. The vacation leave is earned by full-time employees at the rate of 4.62 hours per pay period, increasing to 6.16 hours per pay period after 15 years of service. The vacation leave may accumulate only to a maximum of twice the annual accrual. Upon retirement or resignation, only full-time employees with 180 days of continuous service will be paid for accumulated vacation leave. Sick leave is earned at the rate of 4.32 hours per pay period. Upon termination, some employees are entitled to receive compensation for a portion of their sick leave balance. Those with seven years of service or more will receive compensation at the rate of 25 percent of their balance up to a maximum of 480 hours.

k. Pensions

For purposes of measuring the net pension liability (asset), deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense (revenue), information about the fiduciary net position of the South Dakota Retirement System (SDRS) and additions to/deletions from SDRS's fiduciary net position have been determined on the same basis as they are reported by SDRS. The Authorities contributions and net pension liability (asset) are recognized on an accrual basis of accounting.

(2) Deposits and Investments

Deposits

The majority of the Authority's cash is on deposit with the State Treasurer. Such funds are invested through the South Dakota Investment Council. Management of the State's internal investment pool is the statutory responsibility of the South Dakota Investment Council (SDIC). The investment policy and required risk disclosures for the State's internal investment pool are presented in the audit report of the South Dakota Investment Council, which can be obtained by contacting the Department of Legislative Audit, 427 South Chapelle, c/o 500 East Capitol, Pierre, South Dakota 57501.

Custodial credit risk is the risk that in the event of a bank failure, the Authority's deposits may not be returned to it. The Authority does not have a deposit policy for custodial credit risk. None of the Authority's deposits were exposed to custodial credit risk.

Investments

In general, SDCL 1-16H-18 permits funds to be invested in (a) direct obligations of, or obligations the principal of the interest on which are fully guaranteed or insured by, the United States of America; or (b) obligations of any solvent insurance company or other corporation or business entity if rated in the two highest classifications established by a standard rating service or insurance companies or a nationally recognized rating agency; or (c) short term discount obligations of the Federal National Mortgage Association; or (d) obligations of any state of the United States or any political subdivision, public instrumentality, or public authority of any state of the United States, which obligations are not callable before the principal is to be paid, are fully secured as to both sufficiency and timely payment by, and payable solely from, obligations described in (a). The Authority did not have any investments as of June 30, 2017.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED)
JUNE 30, 2017

(3) Changes in Capital Assets

A summary of changes in capital assets for the year ended June 30, 2017 is as follows:

	Balance June 30, 2016	Reclassified*	Increases	Decreases	Balance June 30, 2017
Business-Type Activities:					
Capital Assets, not Being Depreciated:					
Land	\$ 1,579,298	\$ -	\$ 234,838	\$ -	\$ 1,814,136
Underground	17,767,956	-	169,000	-	17,936,956
Archive Materials	70,000	-	-	-	70,000
Construction Work in Progress (Note 8)	19,258,934	(387,670)	926,189	-	19,797,453
Total Capital Assets, not Being Depreciated	38,676,188	(387,670)	1,330,027	-	39,618,545
Capital Assets, Being Depreciated:					
Equipment Under Capital Lease	883,945	-	-	-	883,945
Automobiles	86,305	-	22,657	-	108,962
Buildings	7,223,086	-	282,000	-	7,505,086
Furniture	74,212	-	-	-	74,212
Computer Equipment	461,417	-	79,473	106,106	434,784
Improvements	37,006,542	-	45,637	-	37,052,179
Infrastructure	1,658,242	209,828	90,792	-	1,958,862
Machinery and Equipment	10,368,447	177,842	364,093	10,817	10,899,565
Total Capital Assets, Being Depreciated	57,762,196	387,670	884,652	116,923	58,917,595
Total Capital Assets, Before Depreciation	96,438,384	-	2,214,679	116,923	98,536,140
Less Accumulated Depreciation:					
Equipment Under Capital Lease	539,791	-	137,752	-	677,543
Automobiles	64,715	-	5,606	-	70,321
Buildings	1,607,386	-	146,223	-	1,753,609
Computer Equipment	384,731	-	31,695	106,106	310,320
Furniture	39,260	-	4,990	-	44,250
Improvements	5,028,571	-	979,874	-	6,008,445
Infrastructure	249,423	-	43,838	-	293,261
Machinery and Equipment	3,655,878	-	745,659	9,648	4,391,889
Total Accumulated Depreciation	11,569,755	-	2,095,637	115,754	13,549,638
Capital Assets, Net	\$ 84,868,629	\$ -	\$ 119,042	\$ 1,169	\$ 84,986,502

*Reclassifications are due to the Authority performing analysis of assets that were previously grouped in construction work in progress. Various items were transferred to equipment and infrastructure and placed in service as of June 30, 2017.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED)
JUNE 30, 2017

(4) Long-Term Debt

A summary of changes in long-term debt follows:

	Beginning Balance	Additions	Deletions	Ending Balance	Due Within One Year
Accrued Compensated Absences	\$ 886,202	\$ 635,894	\$ 530,253	\$ 991,843	\$ 495,922
Xenon Notes Payable	2,000,000	2,000,000	-	4,000,000	-
Capital Acquisition Lease	344,154	-	137,752	206,402	190,206
	<u>\$ 3,230,356</u>	<u>\$ 2,635,894</u>	<u>\$ 668,005</u>	<u>\$ 5,198,245</u>	<u>\$ 686,128</u>

Xenon Notes Payable

Loan Agreements with S.D. Community Foundation (SDCF), S.D. State University Foundation (SDSUF), and University of S.D. Foundation (USDF) to purchase xenon. The loans are 11 year, unsecured non recourse loans with 2.5% simple interest paid quarterly. The SDCF note is due on October 1, 2026. The SDSUF and USDF notes are due December 1, 2026. Also see Note 8.

\$ 4,000,000

Capital Acquisition Lease

The Authority leases a deep level pump system from AmWest, Inc. - Hydro Resources. The lease is due in monthly installments of \$35,000 per month tentatively through July 31, 2018 . The Interest Rate is 4%. Also see Note 8.

\$ 206,402

This lease meets the criteria to be called a capital lease; however, since the payments on this lease are funded under the Department of Energy contract through Lawrence Berkeley National Laboratory (LBNL), title will actually vest with LBNL rather than with the Authority. Because this meets the definition of a capital lease, the Authority has recorded the related asset and liability. The asset is being fully depreciated over the term of the lease and will be removed from the books at the end of the lease.

The annual requirements to amortize long-term debt outstanding as of June 30, 2017, are as follows:

	Capital Acquisition Lease		Xenon Notes Payable		Totals	
	Interest	Principal	Interest	Principal	Interest	Principal
2018	\$ 4,794	\$ 190,206	\$ 100,000	\$ -	\$ 104,794	\$ 190,206
2019	54	16,196	100,000	-	100,054	16,196
2020	-	-	100,000	-	100,000	-
2021	-	-	100,000	-	100,000	-
2022	-	-	100,000	-	100,000	-
2023-2027	-	-	437,500	4,000,000	437,500	4,000,000
Total	<u>\$ 4,848</u>	<u>\$ 206,402</u>	<u>\$ 937,500</u>	<u>\$ 4,000,000</u>	<u>\$ 942,348</u>	<u>\$ 4,206,402</u>

Total cost and accumulated amortization for the capital lease is as follows:

Gross amount of assets under capital lease	\$ 883,945
Accumulated amortization	<u>677,543</u>
	<u>\$ 206,402</u>

The purchase price at the commencement of the financing (capital acquisition) lease was:

Principal	\$ 883,945
Interest	<u>91,055</u>
Total	<u>\$ 975,000</u>

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**NOTES TO FINANCIAL STATEMENTS (CONTINUED)
JUNE 30, 2017**

(5) Xenon Purchased

Xenon purchased is valued at a cost per liter with additional freight, customs, and analysis charges. Total xenon purchased to date is \$5,040,356 as shown by the detail below.

<u>Fiscal Year</u>	<u># of Liters</u>	<u>Total Cost</u>	<u>Average Cost/Liter</u>
2014	20,000	\$ 332,855	\$16.64/liter
2016	200,000	1,273,808	6.37/liter
2017	600,295	3,433,693	5.72/liter
Total Purchased	820,295	\$ 5,040,356	\$ 6.14/liter

(6) Retirement/Pension Plan

Plan Information:

All employees, working more than 20 hours per week during the year, participate in the South Dakota Retirement System (SDRS), a cost sharing, multiple employer defined benefit pension plan administered by SDRS to provide retirement benefits for employees of the State of South Dakota and its political subdivisions. The SDRS provides retirement, disability, and survivors' benefits. The right to receive retirement benefits vests after three years of credited service. Authority for establishing, administering and amending plan provisions are found in SDCL 3-12. The SDRS issues a publicly available financial report that includes financial statements and required supplementary information. That report may be obtained at <http://www.sdrs.sd.gov/publications/> or by writing to the SDRS, P.O. Box 1098, Pierre, SD 57501-1098 or by calling (605) 773-3731.

Benefits Provided:

SDRS has three different classes of employees, Class A, Class B public safety and Class B judicial. Class A retirement benefits are determined as 1.7 percent prior to 2008 and 1.55 percent thereafter of the employee's final 3-year average compensation times the employee's years of service. Employees with 3 years of service are eligible to retire at age 55. Class B public safety benefits are determined as 2.4 percent for service prior to 2008 and 2.0 percent thereafter of employee final average compensation. Class B judicial benefits are determined as 3.733 percent for service prior to 2008 and 3.333 percent thereafter of employee final average compensation. All Class B employees with 3 years of service are eligible to retire at age 45. Employees are eligible for service-related disability benefits regardless of length of service. Three years of service is required for nonservice-related disability eligibility. Disability benefits are determined in the same manner as retirement benefits but are payable immediately without an actuarial reduction. Death benefits are a percent of the employee's final average salary.

The annual increase in the amount of the SDRS benefits payable each July 1st is indexed to the consumer price index (CPI) based on SDRS funded status:

- If the SDRS market value funded ratio is 100% or more – 3.1% COLA
- If the SDRS market value funded ratio is 80.0% to 99.9%, index with the CPI
 - 90.0% to 99.9% funded – 2.1% minimum and 2.8% maximum COLA
 - 80.0% to 90.0% funded – 2.1% minimum and 2.4% maximum COLA
- If the SDRS market value funded ratio is less than 80% - 2.1% COLA

All benefits except those depending on the Member's Accumulated Contributions are annually increased by the Cost-of-Living Adjustment.

Contributions:

Employees are required by state statute to contribute 6 percent of their salary to the plan. State statute also requires the employer to contribute an amount equal to the employee's contribution. State statute also requires the employer to make an additional contribution in the amount of 6.2 percent for any compensation exceeding the maximum taxable amount for social security. The Authority's contributions to the SDRS for the fiscal years ended June 30, 2017, 2016 and 2015 was \$595,112, \$573,626, and \$557,420, respectively, equal to the required contributions each year.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**NOTES TO FINANCIAL STATEMENTS (CONTINUED)
JUNE 30, 2017**

(6) Retirement/Pension Plan (Continued)

Pension Liabilities (Assets), Pension Expense (Revenue), and Deferred Outflows of Resources and Deferred Inflows of Resources to Pensions:

At June 30, 2016, SDRS is 96.89% funded and accordingly has a net pension liability. The proportionate shares for the Authority of the components of the net pension liability of South Dakota Retirement System, as of June 30, 2016 are as follows:

Proportionate share of pension liability	\$54,553,152
Less Proportionate share of net pension restricted for pension benefits	52,854,959
Proportionate share of net pension liability (asset)	<u>\$ 1,698,193</u> =====

At June 30 2017, the Authority reported a liability (asset) of \$1,698,193 for its proportionate share of the net pension liability (asset). The net pension liability (asset) was measured as of June 30, 2016, and the total pension liability (asset) used to calculate the net pension asset was based on a projection of the Authority's share of contributions to the pension plan relative to the contributions of all participating entities. At June 30, 2016, the Authority's proportion was .50273600% which is a decrease of .0061729% from its proportion measured as of June 30, 2015.

For the year ended June 30, 2017, the Authority recognized pension expense of \$626,515. At June 30, 2017, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	<u>Deferred Outflows Of Resources</u>	<u>Deferred Inflows Of Resources</u>
Difference between expected and actual experience.	\$ 591,179	\$ -0-
Changes in assumption.	1,017,137	-0-
Net Difference between projected and actual earnings on pension plan investments.	1,888,964	-0-
Changes in proportion and difference between Authority contributions and proportionate share of contributions.	82,338	-0-
Authority contributions subsequent to the measurement date.	595,112	-0-
TOTAL	<u>\$ 4,174,730</u> =====	<u>\$ -0-</u> =====

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**NOTES TO FINANCIAL STATEMENTS (CONTINUED)
JUNE 30, 2017**

(6) Retirement/Pension Plan (Continued)

\$595,112 reported as deferred outflow of resources related to pensions resulting from the Authority’s contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ending June 30, 2018. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense (revenue) as follows:

Year Ended June 30:	
2018	\$ 974,815
2019	601,967
2020	1,213,586
2021	789,250
TOTAL	<u>\$3,579,618</u>

Actuarial Assumptions:

The total pension liability (asset) in the June 30, 2016 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.25 %
Salary Increases	5.83 % at entry to 3.87 % after 30 years of service
Investment Rate of Return	7.25 % through 2017; 7.50 % thereafter, net of pension plan investment expense

Mortality rates were based on the RP-2000 Employee Mortality Table for males and females, as appropriate.

The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period July 1, 2005 through June 30, 2011. The mortality assumptions were revised based on an extension of the experience study including mortality experience through June 30, 2013.

Investment portfolio management is the statutory responsibility of the South Dakota Investment Council (SDIC), which may utilize the services of external money managers for management of a portion of the portfolio. SDIC is governed by the Prudent Man Rule (i.e., the council should use the same degree of care as a prudent man). Current SDIC investment policies dictate limits on the percentage of assets invested in various types of vehicles (equities, fixed income securities, real estate, cash, private equity, etc.). The long-term expected rate of return on pension plan investments was determined using a method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighing the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of real rates of return for each major asset class included in the pension plan’s target asset allocation as of June 30, 2016 (see the discussion of the pension plan’s investment policy) are summarized in the following table using geometric means:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
Global Equity	58.0%	4.5%
Fixed Income	30.0%	1.8%
Real Estate	10.0%	4.6%
Cash	2.0%	0.7%
Total	<u>100%</u>	

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED)
JUNE 30, 2017

(6) Retirement/Pension Plan (Concluded)

Discount Rate:

The discount rate used to measure the total pension asset was 7.25 percent through 2017 and 7.50% thereafter. The projection of cash flows used to determine the discount rate assumed that employee contributions will be made at the current contribution rate and that matching employer contributions from will be made at rates equal to the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability (asset).

Sensitivity of liability to changes in the discount rate:

The following presents the Authority's proportionate share of the net pension liability (asset) calculated using the Discount rate of 7.25 percent through 2017 and 7.50 percent thereafter, as well as what the Authority's proportionate Share of the net pension liability (asset) would be if it were calculated using a discount rate that is 1-percentage point lower (6.25/6.50%) or 1-percentage point higher (8.25/8.50%) than the current rate:

	<u>1%</u> <u>Decrease</u>	<u>Current</u> <u>Discount</u> <u>Rate</u>	<u>1%</u> <u>Increase</u>
Authority's proportionate share of the net pension liability (asset)	\$9,503,064	\$1,698,193	\$(4,667,518)

Pension Plan Fiduciary Net Position:

Detailed information about the plan's fiduciary net position is available in the separately issued SDRS financial report.

(7) Risk Management

The Authority is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. There were no insurance claims exceeding insurance coverage during the past three years. During the period ended June 30, 2017, the Authority managed its risks as follows:

Building Structure Charges:

The buildings and permanent structures owned by the Authority are not covered by commercial insurance.

Personal Property Insurance:

The Authority purchases insurance for the contents of the administration building from a commercial insurance carrier, however, the contents of the Authority's other buildings are not insured.

Employee Health Insurance:

The Authority purchases health insurance for its employees from a commercial insurance carrier. Settled claims resulting from these risks have not exceeded the liability coverage during the past three years.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED) JUNE 30, 2017

(7) Risk Management (Continued)

Liability Insurance:

The Authority purchases liability insurance for risks related to torts, theft or damage of property, errors and omissions of public officials, employee practices liability coverage, and professional engineers' coverage through its participation in the South Dakota Authority Captive Insurance Company, a component unit of the State of South Dakota. Additional liability coverage including environmental liability is purchased from commercial insurance carriers. Settled claims resulting from these risks have not exceeded the liability coverage during the past three years.

Worker's Compensation:

At the policy renewal date of 06/01/17 the Authority continues to purchase workmen's compensation through the South Dakota Worker's Compensation Insurance Plan. Settled claims resulting from these risks have not exceeded the liability coverage during the past three years.

Unemployment Benefits:

The Authority provides coverage for unemployment benefits by paying into the Unemployment Compensation Fund established by state law and managed by the State of South Dakota.

(8) Significant Commitments, Contracts, and Subsequent Events

On December 23, 2009, the Authority received \$20,000,000 designated as Sanford Gift No.2. Gift No.2 was originally established for the Sanford Center for Science Education. Two amendments to the Homestake Gift Agreement were signed in June 2010 and October 2011, respectively, whereby it was agreed to use \$15 million of this \$20 million for the purpose of infrastructure and safety upgrades at the Underground Davis Campus and for replacing steel and other rehabilitation of the Ross Shaft. In early August, 2012, the Authority signed a third amendment to the Gift Agreement and received the remaining \$15 million of Gift No.2 called for by Section 2 of the Gift Agreement. The Gift No.2 balance of \$20 million was to be held in a restricted fund whereby the principal was not to be expended until a written approval of a business and operational plan for the Sanford Center for Science Education was received from Mr. Sanford. Furthermore, the third amendment allowed the Authority to utilize and expend interest and other earnings on Gift No.2 restricted funds. In May, 2013, the Authority signed a fourth amendment to the Gift Agreement whereby it was agreed to expend up to \$7,000,000 of Gift No.2 for the construction or remodeling of the Yates Dry Building (located at SURF), the remodeling or replacement of the Lead Homestake Visitor's Center and the remodeling of Jonas Hall (located on the campus of Black Hills State University in Spearfish, SD). This authorization was conditioned on the Authority raising \$1.5 million from other sources for the Black Hills State University project and \$1 million for the Sanford Lab Homestake Visitor's Center in Lead. The Authority secured a \$2 million Future Fund grant from the State of South Dakota in October 2013 and an additional \$500,000 was received in July 2014 from Great Plains Education Foundation that satisfies this monetary obligation. Both outside facilities agreed in writing to incorporate and use the name "Sanford" in the naming of the facilities. Operating agreements are in place which reasonably provide for the ongoing operations of the respective facilities by the Homestake Visitor Center, Inc. and Black Hills State University. Given the construction budget of the (SLHVC) and the Jonas Science Building renovation costs, it was not possible to undertake the upgrades to the Yates Dry. These details were reported in the Fifth Amendment to the Homestake Gift Agreement in February 2015. Furthermore, any part of Gift No.2 not used for the three construction projects may be used for the construction and operation of additional underground laboratory space at SURF to accommodate other experiments, and for related infrastructure to access or support the new laboratory space through the shafts. After the above projects were finished, approximately \$1,000,000 remained. On June 23, 2016 the sixth amendment was signed allowing the Authority to use the remaining funds to purchase real estate known as "Ellison Hill" and to conduct needed environmental assessments and remediation of the property. This will provide needed storage and

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED) JUNE 30, 2017

(8) Significant Commitments, Contracts, and Subsequent Events (Continued)

construction material laydown space for the (LBNG) and (DUNE) projects. The “Ellison Hill” property was purchased in May 2017. A contract with Horsley Specialties, Inc. was executed in May 2017 for \$357,144 for the asbestos removal. The cost of this remediation will be shared equally by the Authority and Homestake Mining Company per the purchase agreement. With additional change orders, the contract amount was decreased to \$327,144. Remediation of the property is scheduled to be complete in December 2017 and will likely deplete the remaining Gift No. 2 funds.

In February 2010, the Authority entered into a contract with AmWest, Inc. – Hydro Resources in the amount of \$1,540,000 for the installation and maintenance of a deep level pump system. Subsequent change orders increased the contract amount to \$1,782,500 and extended the date through December 31, 2011. Another change order signed in May 2012 increased the contract amount to \$4,482,500 with a period of performance through December 31, 2017. The leased pump system is designed to dewater the mine from approximately the 5000’ level to approximately the 7800’ level. With the current vision of the DOE to not develop science laboratories past the 4850’ level, the scope of this contract has been revised. Further negotiations with AmWest, Inc. resulted in the signing of another addendum to the contract effective January 1, 2013. This addendum reduced the monthly lease charges by \$2,500 per month for the years of 2013 to the end of the lease, tentatively July 31, 2018, resulting in an overall savings of \$150,000. Additionally, the agreement calls for the leased property to become the property of the lessee at the end of the lease without any additional payment. It will then become the property of the Federal Government as these capital asset-type costs are being charged direct to the subcontract with LBNL.

A contract was signed in early January 2014 with the South Dakota School of Mines and Technology (SDSM&T) to be the lead institution for the accelerator project known as (CASPAR) Compact Acceleration System Performing Astrophysical Research. With an additional change order the contract total is \$999,334 and extends into fiscal year 2018. This project is located in the new Ross Campus laboratory at the 4850’ Level. Another underground facility was completed as a laboratory for Black Hills State University to support low background counting activities, biology study workstations, and other future small-scale experiments. Contracts have been signed with both institutions whereby each will pay the Authority for reasonable energy costs and any other specific needed supplies.

The Authority’s long term cooperative agreement with Homestake Mining Company of California continues. The Authority agrees to combine Homestake’s wastewater from Grizzly Gulch with the mine wastewater, as well as treat, and discharge the water. For the first year of this agreement, Homestake agreed to pay the Authority an amount ranging from \$.58 to \$.84 per 1000 gallons based on average total gallons treated per minute per month. Revenue from this agreement for the past two years was \$206,036 and \$147,832 respectively. Revenue was lower this last year due to the number of gallons treated being lower. This negotiated treatment price will be renegotiated once per year for the length of the contract. The negotiated price was renewed for the current year. Estimated revenues for the upcoming year are at \$168,000; somewhat higher than last year’s actual due to increasing Homestake water to be treated. The term of the contract runs to September 30, 2020.

A lease between the Authority and Department of Energy (DOE) for land (above ground) and space (underground) for the Long Baseline Neutrino Facility (LBNF) was signed on March 29, 2016. The term of the lease goes through April 30, 2036, but shall remain in force thereafter from year to year without further notice, but shall in no event extend beyond a total of 65 years. An easement was signed with Homestake Mining Company for the construction and maintenance of conveyor facilities for the transportation of excavated rock to the Open Cut (open mine pit) owned by Homestake. The Long Baseline Neutrino Facility will include a large experimental facility underground at the 4850’L. Waste rock excavated from that level will be deposited into the Open Cut. An additional easement was negotiated with the City of Lead across their property to construct, maintain, and operate this overhead conveyance system.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED) JUNE 30, 2017

(8) Significant Commitments, Contracts, and Subsequent Events (Continued)

The Authority, along with the South Dakota Bureau of Administration, and five additional South Dakota Authorities signed a Joint Powers Agreement on June 1, 2015 to form a captive insurance company to insure against certain risks. \$2,500,000 was repurposed in August 2015 from a portion of the \$10,000,000 Indemnification Fund held by the Authority. The original Appropriation Act for the indemnification fund that was made by the State Legislature in 2004 was included as a part of the agreement between Homestake Mining Company and the Authority.

Homestake Mining Company agreed with the signing of the Third Amendment to the Property Donation Agreement in August 2015 to release \$2,500,000 from the Indemnification Fund for the Authority to fund the captive insurance company. The Act from 2004 was revised by the State Legislature per Legislative Session 2015 HB 1186, to allow the use of up to \$2,500,000 to be used to provide initial capital and pay expenses for the Authority's purposes in the captive insurance company.

Letter Agreement #1586 was signed in August 2015 between the Governor's Office of Economic Development (GOED) and the Authority whereby the State is granting up to \$6,000,000 between July 14, 2015 and September 30, 2018. The State has chosen to engage in a partnership with the Authority, the South Dakota Community Foundation, the South Dakota State University Foundation, and the University of South Dakota Foundation to assist with the costs of infrastructure/laboratory upgrades, procurement of xenon for future "Dark Matter" experiments, and interest payments to these foundations. The full \$6,000,000 has been received from the State as well as \$2,000,000 from the South Dakota Community Foundation, and \$1,000,000 each from the University of South Dakota Foundation and the South Dakota State University Foundation. Loan agreements are in place between the Authority and the three foundations for a total of \$6,000,000 to be used for the purchase of xenon for the future LZ experiment. The loans extend to the last quarter of 2026. They are unsecured nonrecourse loans with 2.5% simple interest to be paid quarterly to each lender. The loans will be repaid at the end of the LZ experiment (approximately October 2026) from the sale proceeds of the xenon previously purchased. Purchase orders for xenon have been issued for an additional 700,000 liters at a total price of \$3,869,234 with Praxair Distribution and Baosteel Gases.

(9) Construction Work in Process

The Authority accumulates the costs of construction projects in Construction Work in Progress until such time as the projects are completed and/or placed in service. Some of the ongoing improvement projects are capitalized as they progress. The \$19,797,453 of construction work in progress at June 30, 2017, consisted of \$17,665,235 of accumulated costs for the Ross Shaft rehabilitation project, \$915,139 for the CASPAR experiment development, \$1,190,700 for LZ facility upgrades, and \$26,379 for the Ellison asbestos assessment and abatement project. The costs accumulated consist of amounts under contract in addition to materials and other expenses purchased by the Authority. The remaining commitment on existing contracts at June 30, 2017 is approximately \$4,697,723. These commitments are to be paid for using current funds that have been redirected from the Sanford Gift #2 as well as the \$12,000,000 funding for the LZ infrastructure/laboratory upgrades, and xenon procurement.

(10) Continuing Operations

The DOE's 2018 budget proposal includes approximately \$14.6 million to fund basic operations at the Sanford Lab. This basic operations funding transitioned to Fermi National Accelerator Laboratory (FNAL). Further negotiations are in process for extension through FY2018 as well as a five-year contract for DOE operations funding. The Ross Shaft rehabilitation project that also transitioned to FNAL will continue until the project is complete. The 2018 budget proposal includes \$4,756,131 for this project. Additionally, Authority support for the LUX/Zeplin experiment engineering support and installation efforts has been extended to September 2018 with a budget of \$1,468,467.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED)
JUNE 30, 2017

(11) Related Party Transactions

Mr. Ron Wheeler was appointed to the Board of Directors by the Governor effective July 1, 2013, and is a current member of the Board of Directors. As of July 1, 2013, Ron Wheeler transitioned from Executive Director to the Director of Governmental & External Affairs for the Authority. Mr. Wheeler was a full-time employee of the Authority until January 3, 2014, at which time he retired from full-time employment. Effective January 3, 2014, the Authority signed a contract with Mr. Wheeler as a consultant for the Authority. The contract, including amendments, is for \$395,000 and extends to January 3, 2019. For the period of July 1, 2016 – June 30, 2017, he was paid \$69,013.13 for his consulting services. Mr. Wheeler will assist in directing the state and federal government affairs programs for the Authority. Furthermore, he will maintain and foster private funding sources for the long-term growth of the facility.

REQUIRED SUPPLEMENTARY INFORMATION OTHER THAN MD&A

SCHEDULE OF PROPORTIONATE SHARE OF THE NET PENSION LIABILITY (ASSET)

South Dakota Retirement System

Last 10 Fiscal Years *

	2017	2016	2015
Authority's proportion of the net pension liability (asset)	0.5027360%	0.5089089%	0.5287996%
Authority's proportionate share of net pension liability (asset)	\$ 1,698,193	\$ (2,158,428)	\$ (3,809,788)
Authority's covered employer payroll	\$ 9,256,007	\$ 9,042,866	\$ 8,888,749
Authority's proportionate share of the net pension liability (asset) as a percentage of its covered-employee payroll	18.35%	23.87%	42.86%
Plan fiduciary net position as a percentage of the total pension liability (asset)	96.89%	104.10%	107.00%

* The amounts presented for each fiscal year were determined as of the measurement date of the collective net pension liability (asset) which is 6/30 of previous fiscal year. Until a full 10-year trend is compiled, the Authority will present information

SCHEDULE OF THE AUTHORITY CONTRIBUTIONS

South Dakota Retirement System

Last 10 Fiscal Years

	<u>2017</u>	<u>2016</u>	<u>2015</u>
Contractually required contribution	\$ 595,112	\$ 573,626	\$ 557,420
Contributions in relation to the contractually required contribution	<u>\$ 595,112</u>	<u>\$ 573,626</u>	<u>\$ 557,420</u>
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Authority's covered-employee payroll	\$ 9,596,007	\$ 9,256,007	\$ 9,042,866
Contributions as a percentage of covered-employee payroll	6.20%	6.20%	6.16%

* Until a full 10-year trend is compiled, the Authority will present information for those years for which information is available.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY
NOTES TO THE REQUIRED SUPPLEMENTARY INFORMATION
Schedule of the Proportionate Share of the Net Pension Liability (Asset) and
Schedule of the Authority Contributions.

Changes of benefit terms:

No significant changes.

Changes of assumptions:

No significant changes.

SUPPLEMENTARY INFORMATION

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**SCHEDULE OF OPERATING EXPENSES
FOR THE YEAR ENDED JUNE 30, 2017**

Personal Services	
Employee Salaries	\$ 8,688,403
Employee Benefits	5,005,249
Total Personal Services	13,693,652
Travel	
Meals and Lodging	51,738
Auto and Fleet Services	37,026
Air - Commercial and Charter	38,145
Incidentals to Travel	3,580
Non-Employee Travel	51,963
Meals (Not Overnight)	127
Total Travel	182,579
Contractual Services	
Equipment Rental	104,578
Contractual - Other	5,477,254
Insurance	410,873
Lobbying	215,000
Computer Services	299,924
Telecommunications	48,121
Monitoring and Programming	76,311
Legal Consultant	109,976
Training	19,612
Consultant Fees - Accounting and Auditing	13,120
Promotion and Advancement	16,413
Dues and Memberships	3,226
Utilities	2,188,775
Maintenance and Repairs	1,115,762
Total Contractual Services	10,098,945
Supplies, Materials and Other Operating Expenses	
Maintenance and Repairs	1,380,404
Other Supplies and Equipment	1,096,983
Other Expenses	4,122
Office Supplies and Equipment	20,444
Safety	364
Licenses and Permits	40,011
Workshop and Registration Fees	17,442
Postage	4,033
Bank Charges	690
Total Supplies, Materials and Other Operating Expenses	2,564,493
Amortization Expense	137,752
Depreciation Expense	1,957,886
Total Operating Expenses	\$ 28,635,307

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
FOR THE YEAR ENDED JUNE 30, 2017**

	Pass-Through Numbers	CFDA Numbers	Amount
<i>U.S. Department of Energy</i>			
Pass-Through the Regents of the University of California LUX (Large Underground Xenon) Research & Development	6973786	81.6973786	\$ 194,896
<i>U.S. Department of Energy</i>			
Pass-Through the Regents of the University of California SURF (Sanford Underground Research Facility) Operations Support	6994297	81.6994297	5,474,402
<i>U.S. Department of Energy</i>			
Pass-Through the Regents of the University of California LUX/Zeplin (LZ) Cryogenic System Integration and Installation	7255146	81.7255146	917,425
<i>U.S. Department of Energy</i>			
Pass-Through the Regents of the University of California SURF (Sanford Underground Research Facility) Ross Shaft Rehab	7262800	81.7262800	3,671,379
<i>U.S. Department of Energy</i>			
Pass-Through the Regents of the University of California LBNL Kismet Project	7289931	81.7289931	74,285
<i>U.S. Department of Energy</i>			
Pass-Through Oak Ridge National Laboratory Experiment Support for Majorana Demonstrator	4000144149	81.4000144149	20,175
<i>U.S. Department of Energy</i>			
Pass-Through Fermi National Accelerator Laboratory (Note 3) SURF (Sanford Underground Research Facility) Operations Support	629760	81.629760	9,560,663
<i>U.S. Department of Energy</i>			
Pass-Through Fermi National Accelerator Laboratory (Note 3) SURF (Sanford Underground Research Facility) Ross Shaft Rehab	630223	81.630223	2,984,691
<i>U.S. Department of Energy</i>			
Pass-Through RESPEC R & D Rock Melt Sealing Tests	02703A	81.02703A	114,102
<i>National Science Foundation:</i>			
Pass-Through South Dakota School of Mines & Technology Mathematical and Physical Sciences Research Grant	PHY-1615197	47.049	20,650
<i>U.S. General Services Administration:</i>			
Pass-Through South Dakota Federal Property Agency (Note 4)	-	39.003	<u>5</u>
Total			<u><u>\$ 23,032,673</u></u>

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**NOTES TO SCHEDULE OF EXPENDITURE OF FEDERAL AWARDS
JUNE 30, 2017**

Note 1: *Basis of Presentation*

The accompanying Schedule of Expenditures of Federal Awards (the "Schedule") includes the federal award activity of the Authority under programs of the federal government for the year ended June 30, 2017. The information in this Schedule is presented in accordance with the requirements of Title 2 U.S. Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance). Because the Schedule presents only a selected portion of the operations of the Authority, it is not intended to and does not present the financial position, changes in net position, or cash flows of the Authority.

Note 2: *Summary of Significant Accounting Policies*

Expenditures reported on the Schedule are reported on the cash basis of accounting. Such expenditures are recognized following the cost principles contained in the Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. Negative amounts shown on the Schedule represent adjustments or credits made in the normal course of business to amounts reported as expenditures in prior years. The Authority has elected not to use the 10-percent indirect cost rate as allowed under the Uniform Guidance

Note 3: *Major Federal Financial Assistance Program*

This represents a Major Federal Financial Assistance Program.

Note 4: *Federal Surplus Property*

The amount reported represents 23.3% of the original acquisition cost of the federal surplus property received by the Authority.

Financial Report—Mr. Mike Headley

Placeholder for the November Financial report and summaries.

Recommended Action:

Motion to accept the Financial Report as presented.

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DIVISION: ALL

BALANCE SHEET

ASSETS

AS OF
11/30/17

CURRENT ASSETS

First Interstate Checking	\$	1,347,393.39
First Interstate Other		10,517.95

Total in Local Checking		1,357,911.34
SD Treas: Indemnification		7,500,000.00
SD Treas: Mine Closure		1,415,782.17
SD Treas: Operating		480,685.27
SD Treas: Sanford Gift #2		322,567.97
SD Treas: Experiments		2,815,505.86

Total with SD Treasurer		12,534,541.27
Billed A/R		1,955,045.99
Unbilled A/R		44,239.19
Other A/R		64,582.51
Inventory - Supplies		2,445,403.23
Inventory - Warehouse		31,504.83
Other Current Assets		393,580.74

Total Current Assets		18,826,809.10

FIXED ASSETS

Land, Underground & Other		12,633,473.13
Bldgs & Infrastructure		10,078,678.68
Improvements		63,426,534.26
Computer Equipment		431,565.17
Equipment & Fixtures		10,895,916.81
Accum Depr & Amort		(13,523,608.96)

Total Fixed Assets		83,942,559.09

OTHER ASSETS

Work in Process		1,165,870.80
Equipment - Capital Lease		128,071.50
Pension Deferred Outflows		4,174,730.00
Xenon Purchased		5,040,356.11

Total Other Assets		10,509,028.41

TOTAL ASSETS

=====

\$ 113,278,396.60

=====

DIVISION: ALL

BALANCE SHEET

LIABILITIES & EQUITY

		AS OF 11/30/17

CURRENT LIABILITIES		
Accounts Payable	\$	798,102.80
Other Payables		15,804.00

Total Accounts Payable		813,906.80
Accrued Payroll Liab		1,050,706.52

Total Current Liabilities		1,864,613.32
OTHER LIABILITIES		
LT Accrued EB/Lease		128,071.50
LT Xenon Notes Payable		4,000,000.00
Pension Deferred Inflows		1,698,193.00

Total Other Liabilities		5,826,264.50
EQUITY		
Restricted: Indemnificati		7,500,000.00
Restricted: Mine Closure		1,415,782.17
Restricted: Sanford Gift2		322,567.97
Restricted: Pension		2,476,537.00
Restricted: Experim. Int.		2,753,584.00

Total Restricted Funds		14,468,471.14
Investment in Gen FA		83,942,559.09
Unrestricted Funds		7,176,488.55

Total Equity		105,587,518.78

TOTAL LIABILITIES & EQUITY	\$	113,278,396.60
		=====

ALL

STATEMENT OF INCOME

FOR THE PERIOD ENDING 11/30/17

	YR-TO-DATE

REVENUE	
DOE Subcontracts	\$ 8,512,895.48
NSF/NASA Subcontracts	9,336.44
State Revenue	193.77
Contributions & Donations	125,000.00
Checking Interest	735.75
Interest Income	53,340.99

TOTAL REVENUE	8,701,502.43
DIRECT COSTS	
Direct Labor	2,676,314.05
ERT Labor	15,598.22
Board of Directors	3,018.12
Capital Outlay >\$5K	103,589.80
Contractual Svcs	1,011,971.93
Inventory	82,263.03
Supplies	461,167.55
Travel - Domestic	26,795.27
Travel - Foreign	10,938.08
Utilities	806,627.61
Other Direct Costs	107,430.05
Unallow/Unbill Costs	144,114.43

TOTAL DIRECT COSTS	5,449,828.14
INDIRECT COSTS	
Fringe Benefits	1,638,702.73
Overhead	2,025,617.91

TOTAL INDIRECT COSTS	3,664,320.64

GROSS PROFIT/LOSS ()FROM OPERATIONS	(412,646.35)

OTHER INCOME	
Water Treatment	56,584.82
Miscellaneous Income	217,482.29
Other Operating Income	1,791.10

TOTAL OTHER INCOME	275,858.21
OTHER EXPENSES	
Loss(Gain) on Sale of FA	10,441.91
Reclass Incr Net Assets	(837,540.59)

TOTAL OTHER EXPENSES	(827,098.68)
	=====
NET INCOME/LOSS ()	\$ 690,310.54

DIVISION: ALL

COMPARATIVE BALANCE SHEET

ASSETS

	AS OF 11/30/17	AS OF 11/30/16	\$ CHANGE	% CHANGE
CURRENT ASSETS				
First Interstate Checking	\$ 1,347,393.39	\$ 1,167,542.34	\$ 179,851.05	15.40%
First Interstate Other	10,517.95	15,214.00	(4,696.05)	-30.87%
	-----	-----	-----	-----
Total in Local Checking	1,357,911.34	1,182,756.34	175,155.00	14.81%
SD Treas: Indemnification	7,500,000.00	7,500,000.00	-	0.00%
SD Treas: Mine Closure	1,415,782.17	1,398,522.89	17,259.28	1.23%
SD Treas: Operating	480,685.27	361,693.54	118,991.73	32.90%
SD Treas: Sanford Gift #2	322,567.97	1,099,096.97	(776,529.00)	-70.65%
SD Treas: Experiments	2,815,505.86	3,484,563.84	(669,057.98)	-19.20%
	-----	-----	-----	-----
Total with SD Treasurer	12,534,541.27	13,843,877.24	(1,309,335.97)	-9.46%
Billed A/R	1,955,045.99	3,066,785.76	(1,111,739.77)	-36.25%
Unbilled A/R	44,239.19	6.93	44,232.26	638272.15%
Other A/R	64,582.51	224,900.52	(160,318.01)	-71.28%
Inventory - Supplies	2,445,403.23	2,408,322.74	37,080.49	1.54%
Inventory - Warehouse	31,504.83	34,559.52	(3,054.69)	-8.84%
Other Current Assets	393,580.74	354,616.80	38,963.94	10.99%
	-----	-----	-----	-----
Total Current Assets	18,826,809.10	21,115,825.85	(2,289,016.75)	-10.84%
FIXED ASSETS				
Land, Underground & Other	12,633,473.13	12,398,635.03	234,838.10	1.89%
Bldgs & Infrastructure	10,078,678.68	8,881,327.62	1,197,351.06	13.48%
Improvements	63,426,534.26	63,284,094.82	142,439.44	0.23%
Computer Equipment	431,565.17	461,416.25	(29,851.08)	-6.47%
Equipment & Fixtures	10,895,916.81	10,551,622.05	344,294.76	3.26%
Accum Depr & Amort	(13,523,608.96)	(11,827,750.50)	(1,695,858.46)	14.34%
	-----	-----	-----	-----
Total Fixed Assets	83,942,559.09	83,749,345.27	193,213.82	0.23%
OTHER ASSETS				
Work in Process	1,165,870.80	1,076,942.86	88,927.94	8.26%
Equipment - Capital Lease	128,071.50	268,134.61	(140,063.11)	-52.24%
Pension Deferred Outflows	4,174,730.00	6,287,854.00	(2,113,124.00)	-33.61%
Xenon Purchased	5,040,356.11	1,606,663.11	3,433,693.00	213.72%
	-----	-----	-----	-----
Total Other Assets	10,509,028.41	9,239,594.58	1,269,433.83	13.74%
	=====	=====	=====	=====
TOTAL ASSETS	\$ 113,278,396.60	\$ 114,104,765.70	\$ (826,369.10)	-0.72%
	=====	=====	=====	=====

DIVISION: ALL

COMPARATIVE BALANCE SHEET

LIABILITIES & EQUITY

	AS OF 11/30/17	AS OF 11/30/16	\$ CHANGE	% CHANGE
CURRENT LIABILITIES				
Accounts Payable	\$ 798,102.80	\$ 1,883,405.22	\$ (1,085,302.42)	-57.62%
Other Payables	15,804.00	15,319.94	484.06	3.16%
	-----	-----	-----	-----
Total Accounts Payable	813,906.80	1,898,725.16	(1,084,818.36)	-57.13%
Accrued Payroll Liab	1,050,706.52	943,335.78	107,370.74	11.38%
	-----	-----	-----	-----
Total Current Liabilities	1,864,613.32	2,842,060.94	(977,447.62)	-34.39%
OTHER LIABILITIES				
LT Accrued EB/Lease	128,071.50	268,134.61	(140,063.11)	-52.24%
LT Xenon Notes	4,000,000.00	2,000,000.00	2,000,000.00	100.00%
Pension Deferred Inflows	1,698,193.00	3,184,802.00	(1,486,609.00)	-46.68%
	-----	-----	-----	-----
Total Other Liabilities	5,826,264.50	5,452,936.61	373,327.89	6.85%
	-----	-----	-----	-----
TOTAL LIABILITIES	7,690,877.82	8,294,997.55	(604,119.73)	-7.28%
EQUITY				
Restricted: Indemnificati	7,500,000.00	7,500,000.00	-	0.00%
Restricted: Mine Closure	1,415,782.17	1,398,522.89	17,259.28	1.23%
Restricted: Sanford Gift2	322,567.97	1,099,096.97	(776,529.00)	-70.65%
Restricted: Pension	2,476,537.00	3,103,052.00	(626,515.00)	-20.19%
Restricted: Experim. Int.	2,753,584.00	3,484,563.84	(730,979.84)	-20.98%
	-----	-----	-----	-----
Total Restricted Funds	14,468,471.14	16,585,235.70	(2,116,764.56)	-12.76%
Investment in Gen FA	83,942,559.09	83,749,345.27	193,213.82	0.23%
Unrestricted Funds	7,176,488.55	5,475,187.18	1,701,301.37	31.07%
	-----	-----	-----	-----
TOTAL EQUITY	105,587,518.78	105,809,768.15	(222,249.37)	-0.21%
	=====	=====	=====	=====
TOTAL LIABILITIES & EQUITY	\$ 113,278,396.60	\$ 114,104,765.70	\$ (826,369.10)	-0.72%
	=====	=====	=====	=====

COMPARATIVE STATEMENT OF INCOME

FOR THE PERIOD ENDING 11/30/17

	YEAR TO DATE	PRIOR YEAR TO DATE	\$ CHANGE	% CHANGE
REVENUE				
DOE Subcontracts	\$ 8,512,895.48	\$ 11,624,602.88	\$ (3,111,707.40)	-26.77%
NSF/NASA Subcontracts	9,336.44	5,038.47	4,297.97	85.30%
State Revenue	193.77	12,000.00	(11,806.23)	-98.39%
Contributions & Donations	125,000.00	125,000.00	-	0.00%
Checking Interest	735.75	100.03	635.72	635.53%
Interest Income	53,340.99	58,787.71	(5,446.72)	-9.27%
TOTAL REVENUE	8,701,502.43	11,825,529.09	(3,124,026.66)	-26.42%
DIRECT COSTS				
Direct Labor	2,676,314.05	2,975,161.48	(298,847.43)	-10.04%
ERT Labor	15,598.22	8,505.00	7,093.22	83.40%
Board of Directors	3,018.12	1,961.09	1,057.03	53.90%
Capital Outlay >\$5K	103,589.80	574,651.00	(471,061.20)	-81.97%
Contractual Svcs	1,011,971.93	2,934,088.48	(1,922,116.55)	-65.51%
Inventory	82,263.03	84,954.89	(2,691.86)	-3.17%
Supplies	461,167.55	794,013.98	(332,846.43)	-41.92%
Travel - Domestic	26,795.27	30,696.96	(3,901.69)	-12.71%
Travel - Foreign	10,938.08	49,727.42	(38,789.34)	-78.00%
Utilities	806,627.61	802,807.72	3,819.89	0.48%
Other Direct Costs	107,430.05	121,910.99	(14,480.94)	-11.88%
Unallow/Unbill Costs	144,114.43	137,426.11	6,688.32	4.87%
TOTAL DIRECT COSTS	5,449,828.14	8,515,905.12	(3,066,076.98)	-36.00%
INDIRECT COSTS				
Fringe Benefits	1,638,702.73	1,612,734.64	25,968.09	1.61%
Overhead	2,025,617.91	2,489,249.29	(463,631.38)	-18.63%
TOTAL INDIRECT COSTS	3,664,320.64	4,101,983.93	(437,663.29)	-10.67%
GROSS PROFIT/LOSS ()	(412,646.35)	(792,359.96)	379,713.61	-47.92%
OTHER INCOME				
Water Treatment	56,584.82	80,111.11	(23,526.29)	-29.37%
Miscellaneous Income	217,482.29	60,553.33	156,928.96	259.16%
Other Operating Income	1,791.10	1,266.50	524.60	41.42%
TOTAL OTHER INCOME	275,858.21	141,930.94	133,927.27	94.36%
OTHER EXPENSES				
Loss(Gain) on Sale of FA	10,441.91	-	10,441.91	100.00%
Reclass Incr Net Assets	(837,540.59)	(775,129.55)	(62,411.04)	8.05%
TOTAL OTHER EXPENSES	(827,098.68)	(775,129.55)	(51,969.13)	6.70%
NET INCOME/LOSS ()	\$ 690,310.54	\$ 124,700.53	\$ 565,610.01	453.57%

South Dakota Science & Technology Authority
Available Resources
11/30/2017

Cash Total Checking	\$	1,347,393
Cash With State Treasurer	\$	<u>12,534,541</u>
Total Cash	\$	13,881,934
Less: Restricted Funds		
Indemnification/Mine Closure	\$	(8,915,782)
Experiments (Xenon, Interest, Infrastructure)	\$	<u>(2,815,506)</u>
 Total Cash Available for Infrastructure Upgrades and Authority Operations	 \$	 2,150,646
Plus: Accounts Receivable Billed	\$	1,955,046
Accounts Receivable Unbilled	\$	44,239
Less: Current Liabilities (Accounts Payable & Accrued Payroll)	\$	<u>(1,754,056)</u>
(not including accts. pay. for Experiment funding)		
Available Cash	\$	<u><u>2,395,875</u></u>

SDSTA Operating Budget Summary FY2017

Actual vs Budget

Nov. 2017 & YTD

	Nov. 2017	Budget	\$ Over/Under		Actual YTD	YTD Budget	\$ Over/Under		% Remaining
			Budget	% of Budget			Budget	% of Budget	
100%									
SDSTA (Authority) Direct Charges									
Board of Directors	\$17,280.00	\$19,900.00	\$2,620.00	86.83%	\$93,908.00	\$99,500.00	\$5,592.00	94.38%	5.62%
Executive Office	\$23,824.00	\$14,766.00	-\$9,058.00	161.34%	\$79,528.00	\$73,577.00	-\$5,951.00	108.09%	-8.09%
Science Center E & O	\$0.00	\$0.00	\$0.00	0.0%	\$11,147.00	\$25,749.00	\$14,602.00	43.29%	56.71%
Science Liaison	-\$919.00	\$0.00	\$919.00	100.0%	-\$460.00	\$0.00	\$460.00	100.00%	100.00%
Sanf.L.Visitor C. (Director)	\$2,240.00	\$4,340.00	\$2,100.00	51.61%	\$17,196.00	\$21,503.00	\$4,307.00	79.97%	20.03%
Subtotal	\$42,425.00	\$39,006.00	-\$3,419.00	108.77%	\$201,319.00	\$220,329.00	\$19,010.00	91.37%	8.63%
Federal/State Funding - Direct Charges									
Fermi P.O.#625691 B/Site Final Des.	-	\$0.00	\$0.00	0.0%	\$124,417.00	\$124,417.00	\$0.00	100.00%	0.00%
Fermi P.O.#625692 Pre Excav.F.D.	-	\$0.00	\$0.00	0.0%	\$164,709.00	\$164,709.00	\$0.00	100.00%	0.00%
Fermi P.O.Miscellaneous	\$1,204.00	\$1,580.00	\$376.00	76.2%	\$3,204.00	\$3,580.00	\$376.00	89.50%	10.50%
Fermi P.O.#631450 Engin. Services	\$0.00	\$0.00	\$0.00	0.0%	\$52,024.20	\$79,499.00	\$27,474.80	65.44%	34.56%
Fermi P.O.#639366 Prof. Services	\$22,910.00	\$26,908.00	\$3,998.00	85.14%	\$43,475.00	\$53,531.00	\$10,056.00	81.21%	18.79%
Fermi C#629760 Bridge OPS	\$925,943.00	\$911,464.00	-\$14,479.00	101.59%	\$4,644,284.00	\$4,765,821.00	\$121,537.00	97.45%	2.55%
Fermi C#630223 Ross Rehab	\$341,975.00	\$359,025.00	\$17,050.00	95.25%	\$1,608,902.00	\$2,132,926.00	\$524,024.00	75.43%	24.57%
LBNL LUX C#6973786	\$0.00	\$0.00	\$0.00	0.00%	\$39,068.00	\$48,691.00	\$9,623.00	80.24%	19.76%
LBNL LUX/Zepplin C#7255146	\$37,362.00	\$48,838.00	\$11,476.00	76.5%	\$146,184.00	\$183,311.00	\$37,127.00	79.75%	20.25%
LBNL LZ Operations C#7355157	\$6,091.00	\$4,625.00	-\$1,466.00	131.7%	\$14,048.00	\$14,998.00	\$950.00	93.67%	6.33%
LBNL SIGMA-V C#7371823	\$15,652.00	\$15,274.00	-\$378.00	102.48%	\$29,336.00	\$30,547.00	\$1,211.00	96.04%	3.96%
MJD (Majorana) ORNL144149	\$2,545.00	\$2,600.00	\$55.00	97.89%	\$11,987.00	\$12,700.00	\$713.00	94.39%	5.61%
BHSU-UGCampus Gen.Serv.	\$0.00	\$200.00	\$200.00	0.0%	\$155.00	\$1,000.00	\$845.00	15.50%	84.50%
Sanf.Sci.Ed.Center - GOED Funded	\$34,869.00	\$33,500.00	-\$1,369.00	104.09%	\$198,480.00	\$217,166.00	\$18,686.00	91.40%	8.60%
SDSM&Tech CASPAR Gen.Serv.	\$1,579.00	\$2,666.00	\$1,087.00	59.23%	\$7,445.00	\$13,330.00	\$5,885.00	55.85%	44.15%
* Xilinx, Inc. P.O.#732495	\$299.00	\$500.00	\$201.00	59.8%	\$1,409.00	\$1,720.00	\$311.00	81.92%	18.08%
Subtotal	\$1,390,429.00	\$1,407,180.00	\$16,751.00	98.81%	\$7,089,127.20	\$7,847,946.00	\$758,818.80	90.33%	9.67%
Indirect Expenses									
Indirect Charges Personnel	\$130,872.00	\$131,602.00	\$730.00	99.45%	\$616,789.00	\$622,133.00	\$5,344.00	99.14%	0.86%
Indirect Charges Other	\$260,484.00	\$244,406.00	-\$16,078.00	106.58%	\$1,652,030.00	\$1,424,079.00	-\$227,951.00	116.01%	-16.01%
Subtotal	\$391,356.00	\$376,008.00	-\$15,348.00	104.08%	\$2,268,819.00	\$2,046,212.00	-\$222,607.00	110.88%	-10.88%
Totals	\$1,824,210.00	\$1,822,194.00	-\$2,016.00	100.11%	\$9,559,265.20	\$10,114,487.00	\$555,221.80	94.51%	5.49%

* Private Corporation (Commercial Group)

SDSTA CAPEX Budget Summary FY17/18
Actual vs Budget
November 2017 & YTD

<u>Budget Area</u>	<u>Actual Month</u>	<u>FY2018 Monthly Budget</u>	<u>\$ Over/Under Budget</u>	<u>% of Budget</u>	<u>Actual YTD</u>	<u>FY2018 YTD Budget</u>	<u>\$ Over/Under Budget</u>	<u>% of Budget</u>	<u>% Remaining</u>
									100.00%
Operational CAPEX	\$ 95,162.06	\$ 72,780.00	\$ (22,382.06)	130.75%	\$ 1,035,721.59	\$ 4,677,160.00	\$ 3,641,438.41	22.14%	77.86%
TOTAL CAPEX	\$ 95,162.06	\$ 72,780.00	\$ (22,382.06)	130.75%	\$ 1,035,721.59	\$ 4,677,160.00	\$ 3,641,438.41	22.14%	77.86%

SD Science & Technology Authority
Operational CAPEX Budget
YTD FY2018 Actual vs Budget

Project #	Project Description	Nov. 2017 YTD	FY2018 Budget	\$ Over/UnderBudget	% of Budget	% Remaining
						100%
CAP2014-01	Sanford Visitor Center Sign/Display	\$ 6,963.93	\$ 5,268.00	\$ (1,695.93)	132.19%	-32.19%
CAP2014-05	CASPAR Experiment Development	\$ 79,850.19	\$ 79,850.00	\$ (0.19)	100.00%	0.00%
CAP2016-02	LZ Surface Facility Upgrades	\$ 161,364.34	\$ 251,329.00	\$ 89,964.66	64.20%	35.80%
CAP2016-03	LZ Xenon Gas	\$ 619,387.58	\$ 4,100,000.00	\$ 3,480,612.42	15.11%	84.89%
CAP2017-02	Ellison Option Asbestos Abatement	\$ 168,155.55	\$ 240,713.00	\$ 72,557.45	69.86%	30.14%
	Totals	\$ 1,035,721.59	\$ 4,677,160.00	\$ 3,641,438.41	22.14%	77.86%

SD Science & Technology Authority
Operational CAPEX Budget
Monthly Actual vs Budget

Project #	Project Description	Nov. 2017	Budget	\$ Over/UnderBudget	% of Budget
CAP2014-01	Sanford Visitor Center Sign/Display	\$ -	\$ -	\$ -	0.00%
CAP2014-05	CASPAR Experiment Development	\$ 62,463.06	\$ 62,463.00	\$ (0.06)	0.00%
CAP2016-02	LZ Surface Facility Upgrades	\$ 32,290.00	\$ 9,900.00	\$ (22,390.00)	326.16%
CAP2016-03	LZ Xenon Gas	\$ 625.00	\$ 417.00	\$ (208.00)	149.88%
CAP2017-02	Ellison Option Asbestos Abatement	\$ (216.00)	\$ -	\$ 216.00	0.00%
	Monthly Totals	\$ 95,162.06	\$ 72,780.00	\$ (22,382.06)	130.75%

Executive Director's Report—Mr. Mike Headley

The Executive Director's Report includes the following:

- 8A. SDSTA Quarterly Update—November monthly report attached (the November financial report and summaries are located under Item 7—Financial Report).
- 8B. Declarations of Surplus Property, attached (informational).
 - 1. SLHVC laptop and components.
 - 2. Douglas Fir and Karri wood timbers.
- 8C. LBNF Update (presentation by Joshua Willhite, LBNF Far Site Conventional Facilities Project Manager).

Recommended Action:

Motion to accept the Executive Director's Report as presented.

November Monthly Report

Submitted by Mike Headley

SDSTA Executive Director

Sanford Underground Research Facility Laboratory Director

December 6, 2017

Science

- Jaret participated in meetings with FNAL and other SDSTA personnel to refine work planning and control guidelines as well as to streamline the SURF Experiment Implementation Program.
- In addition to safety, this year's perception survey included elements related to support and customer service. The survey was distributed to both SDSTA employees and researchers.
- Facility highlights: Monitoring data collected from areas at the Davis and Ross Campuses indicate higher corrosion levels in the CASPAR laboratory than were measured in 2016; more monitoring will be conducted. Unusual fluctuations in radon levels measured at both 4850L campuses were traced to two open air doors on the 800L that have since been closed.
- Interruptions: Two shifts were affected by access restrictions due to the release of a load in the Ross Shaft (Nov 22) and high winds (Nov 29); the request by some groups for a make-up shift was accommodated. The high winds also caused two power blips that affected the Davis Campus dehumidifier chiller; a third dehumidifier outage also occurred earlier in the month. There was also a short outage of the Oro Hondo fan.

Large Underground Xenon—LUX

- The last of the now-empty vessels associated with LUX calibration sources were shipped offsite.

MAJORANA DEMONSTRATOR—MJD

- Copper machining continues at the Davis Campus, including screws, spring clips, cover plates and high voltage parts (some HV parts are being shipped to UNC for testing). In some cases, facility exhaust fans were re-activated for various tools that were mothballed earlier in the year.
- Various parts were leached at the Davis Campus for assay measurements that will be performed at Pacific Northwest National Lab (PNNL).
- Setup for electroforming activities continues at the Davis Campus, including work on supports for monitoring equipment. Acid transport refresher training is being planned with SDSTA personnel.
- Updates were made to data acquisition system firmware and vacuum system computers.
- Sanford Lab provided additional support for liquid nitrogen dewar swaps during the Thanksgiving holiday period when MJD personnel were not onsite.
- Sanford Lab submitted an NRC license amendment for a custom Co-56 line source requested by MJD (similar to the MJD Co-60 and Th-228 calibration sources currently onsite and in use at the Davis Campus).
- Sanford Lab provided facility materials for the upcoming LEGEND (ton-scale Ge) meeting being held at LBNL in early December.

Low-Background Counting

Black Hills State University Underground Campus—BHUC:

- The dewar swap procedure was updated, incorporating details of the nitrogen purge manifold system.

BHUC Physics Users:

- Assays of LZ samples continue, in coordination with radon emanation tests being performed at South Dakota School of Mines & Technology (SDSM&T).
- Lawrence Berkeley National Lab (LBNL) expects repairs for the two germanium detectors for the dual-crystal low-background counter (LBC) system to be completed by late December.

- Progress on the Alabama/USD “Ge IV” LBC will continue in December when personnel return to site complete the initial installation and begin commissioning. SDSTA personnel are assisting with a design for liquid nitrogen (LN) piping (special since the detector is located outside of the cleanroom).

Compact Accelerator System for Performing Astrophysical Research—CASPAR

- CASPAR staffed two shifts in November in preparation for activities in mid-December. In particular, insulating gas from the accelerator tank was vented to make adjustments to the corona spacing. As well, gate valve controller relays were replaced and controllers were swapped for two beamline turbo pumps.
- When University of Notre Dame personnel return in December, the goal is to complete the radiation survey and conduct accelerator operation training.
- Use of LN is projected to begin in February 2018, and options are being discussed with Sanford Lab on a suitable location for hoisting a dewar from the custom rail transport vehicle.
- First physics measurements are being planned for several weeks starting January using a nitrogen-14 target.

LUX-ZEPLIN—LZ

- A successful trial movement of a mock liquid scintillator vessel crate was conducted via the Yates Shaft and into Davis Campus. Some tight-clearance areas were identified. There was minor damage to a MJD whiteboard in the Davis Campus Common Corridor and it may make sense to temporarily remove the MJD gowning annex for transport of the actual crates.
- Hard water deposits in a cooling line valve led to the Surface Laboratory radon-reduction system being offline for three weeks. Mitigation strategies and a maintenance service contract are being pursued.

Other Current Research Activities

Geology:

- SIGMA-V: The first set of four drill holes was completed in the 4850L West Drift. Progress was slower than expected due to an increased fraction of quartz encountered in some holes; to mitigate the impact for future drilling a survey of visible quartz was performed to guide specific locations for successive holes. Microbial samples continued to be collected, a special notching tool developed by Sandia National Laboratory was exercised and optical and acoustic geophysical logging was performed by LBNL researchers. Some Sanford Lab materials were circulated to the DOE Enhanced Geothermal Systems Program Manager, and plans are underway to host a visit by the Director of DOE's Geothermal Technologies Office in 2018.

Biology:

- NASA Astrobiology Institute: Researchers returned to Sanford Lab in November to visit sampling sites on the 800L, 2000L, 4100L and 4850L. Smaller cartridges were added to supplement existing units on the 800L and 2000L. On the 4850L, water was flowing in one hole that had previously dried up, and materials were recovered from another site where the effect of flow rate on colonization was being investigated (a battery-powered aquatic oxygen-sensing system was used at that site).

Engineering:

- Xilinx: A new location at the Davis Campus was identified and additional power was installed to support the full suite of chip array tests that began at the end of November.

Underground Access

Ross Shaft

Ross Shaft crews completed four sets in November (297-300). The Behavior Based Safety (BBS) program is actively being used by the crews. Multiple Job Hazard Analyses (JHAs) and Standard Operating Procedures (SOPs) were also reviewed during this time. A new JHA for mucking the sump and “clamming” process. UMC loads were lowered to various levels, along with scheduled maintenance and quality check activities. Crews supported pump room work on various levels.

On November 21, a steel guide for one of the skip compartments came loose from its rigging and fell down the shaft approximately 150 feet. No one was injured (when materials are lowered, no one is ever below the load) and there was no structural damage in the shaft. The rigging set up is the same one used to lower guides for the previous 299 sets. Nevertheless, the rigging design was modified to prevent a future incident. Crews responded very well in managing and recovering from the incident and returned to full operations on November 28.

Yates Shaft

A total of 119 loads were handled through the shaft in November. Top Down Maintenance (TDM) corrected 98 conditions for the month. Refurbishment activities took place near the 2900L in the cage compartments. Multiple tours were accommodated. Air door and water wall inspections also took place at every station.

Underground Maintenance Crew (UMC)

The UMC completed installing ground support in the 4850L West Lab Access Drift. Ground support installation in the East Lab Access Drift on the 4850L continues to work toward the Yates Shaft from the No. 4 Winze Wye direction. Crews also continued removing utilities at the 4850L No. 9 Ledge/No. 11 Ledge locations.

Facility Infrastructure

Davis and Ross Campus Maintenance

The Facility Infrastructure team monitored and assisted with new equipment installation. Quarterly air handling equipment and fire alarm preventive maintenance activities continue with vendors. Pure Aire oxygen sensor re-calibration activities have been scheduled.

Surface Facility Maintenance Building and Grounds

The SDSTA completed all seven (7) day, thirty (30) day, and annual (360) day preventative maintenance activities. Boart drill and jackleg repairs continue. Fans were changed at the No. 5 Shaft to improve air flows underground. In support of Sanford Lab’s recycling efforts, another four tons of material were collected and sent to the recycling center. Fourth quarter storm water checks were completed. A major clean up and relocation of surplus/spare items in the Ross Hoistroom is underway in preparation for the upcoming hoist work for LBNF.

Dewatering

A new 100-hp pump was installed on the 2600L. Preventative maintenance was performed on pumps and pumping apparatus. Installation of the six-inch Yates sump discharge line continues. A thrust block on the 3650L pump discharge line was replaced.

Waste Water Treatment Plant (WWTP)

At the end of November, the water level in the underground pool was at 5,787 feet, which represents a net loss of 29 feet for the month. Modifications to the control system to allow specific functions to be operated from off-site are progressing, limiting the number of off-hour call outs; there was one call in November. The WWTP has not discharged any water to the sanitary sewer for over 515 days. Instead, the water is being recycled through the WWTP. The team continues to balance water sources to manage temperatures with the process.

Transportation and Mobile Equipment

The team performed vehicle preventative maintenance actions and repairs to fleet and site vehicles. In addition, the team maintained underground locomotives, support equipment including air compressors, loaders and rail cars. The two-yard loader has been relocated to No. 17 ledge areas on the 4850L where minor repairs continue.

Electrical and Cyber Infrastructure

The team continues to support the Ross Shaft rehabilitation project with the relocation of power cables in the shaft as the new steel is installed. The team continues to work reviewing and modifying the underground communications infrastructure to ensure each level has voice over IP (VoIP) and FEMCO (i.e. twisted pair) phones at each underground facility level. Fiber optic cables are being extended to the pump room levels to allow for installation of new phones. The team assisted with hoist electrical maintenance and is working extensively with the Ross Shaft crews to automate column fill and drain valves and to de-energize electrical cables in the refurbishment work area. Lastly, crew members attended Arc Flash training.

Engineering

Long-Baseline Neutrino Facility (LBNF) and Deep Underground Neutrino Facility (DUNE)

Proposals for the Oro Hondo Fan Drive Replacement were received in November but did not meet SDSTA requirements on cost and technical criteria. An analysis on repackaging design options is underway so the project can be re-advertised in December.

As a result of the loss of a steel guide in the North Skip of the Ross Shaft, the Engineering Department performed an inspection of the shaft and assessment of any suspected damage to the set steel. Assessment concluded that damage was cosmetic in nature and had no impact on the structural integrity of the shaft.

The engineering review was completed of the 50% design deliverables for the Pipe Conveyor System to transport excavated materials from the Ross Complex to the Open Cut. The 100% design deliverable is expected in December.

Several members of the Engineering team attended the LBNF/Contract Manager General Contractor (CMGC)/Designer Partnering sessions and the Final Design Kick-off meeting in New York City. Partnering sessions will be held on a quarterly basis between the key project players.

The Ross Shaft Set 305 Crash Beam Excavation design was developed during the month with a focus on optimizing the design to reduce the complexity and volume of required excavation for the 5000L crash beam structure and the Sump Pocket structure. As a result of these discussions, the final design deliverable down to Set 308 was completed. A site visit was held with Buckley Powder and Dyno Noble representatives to coordinate their services in design and managing this excavation.

LUX-ZEPLIN (LZ)

In November, the LZ Status and Operations Planning Director's Review was held at the Lawrence Berkeley National Laboratory. The Cryogenics WBS area received one recommendation for the project to consolidate all heat loads in order to validate adequate margin exists for cryocooler capacity before the next DOE Review in January 2018. Recent analysis of the closed loop circulation system shows an increased load on the cryocooler so that there is little remaining margin. This will likely require testing of xenon circulation components to verify efficiency.

Imperial College, London, UK, has drafted a proposal to take on the supply of the LN cryocooler. The proposal was submitted to the UK Science and Technology Facilities Council (STFC). If accepted, this would reduce the DOE Project cost by about \$200K, which is included as a project risk opportunity.

The recently installed surface Radon Reduction System went out of service in mid-Nov due to a failed water control valve that modulates water flow to the refrigerator condenser. This type of shutdown causes significant risk to the LZ project and so as part of the LZ Operations contract, requirements for a proposed maintenance agreement to cover the servicing of the Radon Reduction System is being pursued.

Contractor site visits for the Davis Lab Rehabilitation were completed. Proposals have been received and are under review by SDSTA and LZ staff.

Slinging and transportation test of the acrylic tank mockup to the Davis Cavern were completed. The mockup was able to clear the path, however, interference with the MJD garbing anteroom and the MJD cooling pipe should prompt changes to the design of the cart as there was zero fit tolerance on all but one degree of freedom.

SURF Infrastructure and Other Experiment Support:

Working in concert with the Underground Access Department, Annual Level Inspections were performed of the 4550L and traversed through the ramp system to the 4700L and 4850L to assess ground conditions and potential installation of ground support for this key ventilation pathway.

A proposal was developed including budgetary pricing and installation options for replacing the large ventilation door on the West Access drift at the 4850L with a pneumatic-driven system used throughout the mining industry. This system would address ventilation and safety issues with the present configuration. The information was presented to Fermi Research Alliance (FRA) for potential funding this fiscal year.

A new detector known as GE-4 is being deployed in the BHUC outside the cleanroom to the north side. This germanium crystal detector will also be cooled with LN. A piping system is in design that will extend the existing vacuum jacketed pipe inside the cleanroom

Environment, Safety and Health

Environmental Compliance

Water—Waste Water Discharge Summary through December 2, 2017:

- *Total water discharged through outfall 001 since June 5, 2008: 6,185,711,921 gallons*
- *Total Underground water treated since June 5, 2008: 3,672,200,201 gallons*
- *Total Tailing water treated since June 5, 2008: 2,687,197,740 gallons*
- *Total water discharged to sewer since June 5, 2008: 105,071,348 gallons*

The October DMR was prepared, signed and loaded into NetDMR. There were no violations.

The draft National Pollution Discharge Elimination System (NPDES) Permit from the state has not been received.

The site storm water plan was updated to include the Ellison Tract and to address other best management practices.

The EPA was contacted by e-mail requesting the discharge of tailing water to the 1250L sump. This practice is needed to provide heating to the water to facilitate the Waste Water Treatment Plant (WWTP) bacterial activity and to help prevent the WWTP from freezing when underground water is limited.

The site storm water annual site compliance inspection was completed. No deficiencies were found.

The 4th quarter storm water inspection was also completed by WWTP personnel.

Air—Data continues to be collected for stationary emissions sources.

Solid Waste

Various wastes/recycle items have been collected, sorted, and disposed at the recycling center.

The Ross sheave wheel decks were cleaned of pigeon debris.

The legacy oily soil spill at the Oro Hondo fan was again addressed as earlier sample test results indicated that contaminated soil remained over the soil removal action level 500 ppm. Soil was again excavated and in place soil resampled. A report is pending to the state. The spill occurred during Homestake site operations.

LBNF/DUNE/LZ/CASPAR/MJD

Environmental support was provided to LZ (proposed scintillator spill procedures), LBNF (review of environmental permits, drilling and pipe conveyor appearance) and MJD (review of acid transport JHA).

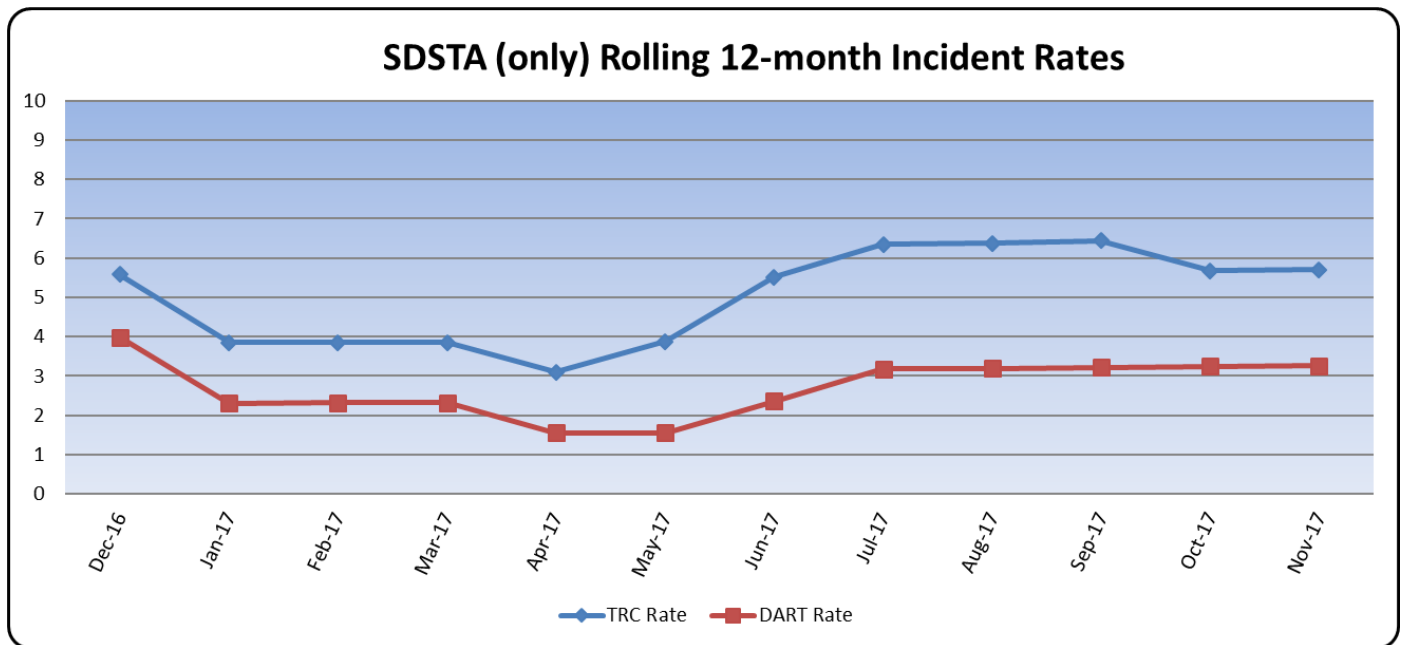
Environmental Support Tasks

A three-day Historical Preservation Training was attended in Denver, CO by the Environmental Manager.

A memo was drafted to recommend an outside vendor for Safety Data Sheets (SDS) Management. As well, an SDS vendor questionnaire was developed to help determine a SDS Management contractor.

SOP reviews were performed for transport of hazardous material and JHAs were written for soils excavation and trenching.

Health and Safety Summary



TRC (Total Recordable Case) = more than first aid treatment was given.

DART (Days Away Restricted Transferred) = more than first aid treatment was given AND restrictions were job-limiting or the employee could not work (subset of a TRC). *Rates are subject to change

November 2017 DARTS/TRC:

- No events to report

November 2017 First Aid Cases:

- No events to report

November 2017 Category 1 or 2 Events:

- Nov 21: Ross shaft steel guide become unsecured and fall into the shaft; property damage

November 2017 Category 3 Events:

- No events to report

November 2017 Items of Interest:

1. Three ESH personnel attended Human Performance Improvement training
2. Distributed the 2017 Safety and Support Perception Survey and compiling results for the annual report
3. Completed the annual audit of the Radiation Safety Program
4. Conducted Powder and Cap monthly inventory; contracted with Buckley Powder to remove entire inventory from SDSTA property
5. Began creating Functional Job Analysis for the Emergency Response Team (ERT) members
6. Provided First Aid Training (carded) onsite to the ERT
7. Conducted Safety Committee meeting
8. Completed air sampling report for the 4850L Davis Campus Pb brick movement
9. Participated in Work, Planning and Control document workshop with FNAL personnel
10. ESH personnel attended and presented at the LZ Director meeting at Berkeley

Education and Outreach (E&O)

Cultural Activities

Cultural and Diversity Coordinator KC Russell completed Section 106 training in compliance with the National Historic Preservation Act and as required by the LBNF/DUNE programmatic agreement.

The Education and Outreach (E&O) team attended a meeting at Todd County Middle School (TCMS) on November 9 with science teachers and coordinators from the two South Dakota Native American Achievement Schools – TCMS and He Dog School in Parmalee. Mato Standing High, Director of the South Dakota Office of Indian Education and member of the Sanford Lab Cultural Advisory Committee, made the introductions. Working with teachers at both schools will continue.

K-12 Education and Outreach

Curriculum units. Table 1 lists the schools, grades and number of students who completed units in November.

Table 1. Curriculum Units

Unit	School	City	Grade or Course (high school)	Total # of students
Exploring the Unseen	Ipswich	Ipswich	5	27
May the Force Be with You	Oelrichs	Oelrichs	5	42
	St Thomas More	Rapid City	6	47
There and Back Again	Newcastle	Newcastle, WY	6	15
Waterworks	Belle-Fourche Middle	Belle Fourche	5	100
'We are Made of Starstuff'	Deuel High	Clear Lake	Chemistry	12
	Hill City High	Hill City	Chemistry	60
	7 schools			303 students

The E&O team continues to provide mentoring and classroom support to teachers who request help as they implement Sanford Lab curriculum units this year. Science Education Specialist Becky Bundy met with a kindergarten teacher at Corral Drive Elementary to guide her through the process.

Deputy Director of E&O Peggy Norris gave presentations at Hill City High School for chemistry and physics students who were completing the 'We are Made of Starstuff' unit or had completed them in the past. The recent exciting announcement about the first detection of colliding neutron stars impacts the scientific debate students have as part of this unit.

The E&O team is working on a new high school unit and considering ideas for a new elementary unit. The team is also making changes to get two units – Starstuff and Waterworks – approved for national recognition as exemplary examples of three-dimensional science instruction.

Nearly 30 teachers have registered for the online professional development course, which started November 20. The course is being taught by Science Education Specialist Kari Webb.

Classroom presentations. Classroom presentations for November are listed in Table 2.

Field trips to Sanford Lab. There were no field trips scheduled for November.

Other K-12 activities. Peggy gave a presentation about the middle school E&O programs to the Rapid City Area Schools task force that is working on improving STEM education. Peggy and Science Education Specialist Julie Dahl participated in STEM night at North Middle School, and Peggy represented Sanford Lab at Rapid City's city-wide 8th grade career fair.

Becky represented Sanford Lab with an exhibit table at Sanford Research's Discovery Days in Sioux Falls, a career fair for high school students.

Also included in the statistics is a visit to Sturgis Brown High School by Sturgis alumnus and Sanford Lab Experiment Support Scientist Mark Hanhardt.

Table 2. Classroom or Assembly Presentations

School/City	Presenter	Grade(s)	No. of Presentations	Total No. of Students
Georgia Morse / Pierre	JMc	6, 8	20	418
Black Hawk / Black Hawk	JD	2, 4	5	132
Memorial Middle / Sioux Falls	JMc	6	16	470
Yankton High / Yankton	JMc	11-12	3	43
Alcester-Hudson / Alcester	JMc	7-10	4	86
Whitewood / Whitewood	JD	K-5	2	93
Valley View / Rapid City	BB	K	2	97
St. Thomas More / Rapid City	PN	6	3	45
Edmunds Central / Roscoe	JMc	6-12	4	56
Hoven / Hoven	JMc	K-12	4	102
Lead-Deadwood / Deadwood	DT	K-5	6	320
11 schools			69 programs	1,862 students

BB = Becky Bundy JD = Julie Dahl JMc = John McEnelly PN = Peggy Norris DT = Deb Thorp

Table 3. Total Impact – November 2017

Group	Students					Educators			Community		
	K-5	6-8	9 -12	Undergrad	Graduate	K-12 Educator	Univ. Faculty/ Staff	Informal	Parents	Sanford Lab Staff	General Public
FIELD TRIPS											
Swanberg Family	0	2	1	0	0	0	0	0	0	0	3
Subtotal	0	2	1	0	0	0	0	0	0	0	3
CURRICULUM UNITS COMPLETED (from Table 1)											
Subtotal	169	62	72	0	0	7	0	0	0	0	0
ASSEMBLY PROGRAMS COMPLETED											
Subtotal	683	1011	168	0	0	0	0	0	0	0	0
OTHER											
RCAS Task Force	0	0	0	0	0	10	0	2	0	0	20
North Middle STEM Night	0	36	0	0	0	0	0	0	4	0	0
Discovery Days	0	0	40	0	0	2	1	3	0	0	0
Todd County MS Visit	0	0	0	0	0	4	0	0	0	0	0
RCAS Career Fair	0	35	0	0	1	2	1	0	1	0	0
Sturgis Brown presentations*	0	0	126	0	0	1	0	0	0	0	0
Hill City presentations	0	0	60	0	0	1	0	0	0	0	0
Subtotal	0	71	226	0	1	20	2	5	5	0	20
Grand Total	852	1146	467	0	1	27	2	5	5	0	23
Grand Total: 2,528 students, educators and members of the general public											

* Science Department activity

Communications

Participated in underground test for LZ.

Attending regular communications meetings with Fermilab and LBNF/DUNE.

Regular communications meetings with SDSMT and BHSU

Community Outreach/Media/Site Visits

- **Community Outreach:** Attended the Lead/Deadwood Annual Community Fund Luncheon
- **Presentations:** BHSU communications students; SD Leadership conference.
- **Media visits:** Voice of America
- **Events:** Deep Talks, November 9
- **Upcoming Events:**
 - Community Leader updates for Lead and Deadwood, Dec. 6—includes tours and presentations.
 - Nobel Day, December 14
 - Community update, Pierre Discovery Center/Rotary club, Dec. 18
 - Deep Talks, Jan. 11

Video, Web, Graphics

- Creating promotional materials for Deep Talks, other events.
- Helping to set up the new Learning Management System.
- Updating a maintenance shop booklet.
- Editing a cultural awareness video.
- Albums in the Sanford Lab Photo Gallery may be viewed at: <http://pics.sanfordlab.org>.
- Ongoing: Stories for Deep Thoughts; updates to the website; general web maintenance; assist media, science collaborations and educational institutions with photographic and information needs.

The November Communications Photos are included as Appendix A.

News coverage

Note: The Rapid City Journal and Black Hills Pioneer are rerunning Deep Thoughts stories weekly.

- [Physicists keep striking out in search for dark matter](#), by Andrew Tarantola, engadget, Nov. 29, 2017
- [OU professors part of team researching unknown, potentially vital bacteria](#), by Adam Troxtell, The Norman Transcript, Nov. 28, 2017
- [Dark matter may be the strangest Halloween weirdness](#), by Al Van Zee, Black Hills Pioneer, Nov. 1, 2017
- [Ask Symmetry: Dark Matter with Dan McKinsey](#), Nov. 1, 2017

Contracts Status

Department of Energy (DOE) subcontracts to SDSTA

- Ross Shaft Rehabilitation (Fermilab): Revision and change order requests to extend subcontract through September 30, 2018 are under review.
- SURF Services (Fermilab): Nothing to report.
- Long Baseline Neutrino Facility: SDSTA Received a small PO from Fermilab for the LBNF public meeting expenses.
- Large Underground Xenon—LUX (Lawrence Berkeley National Lab): SDSTA received Modification No. 2 to Subcontract 7355157, adding incremental funds.
- Other subcontracts to SDSTA: Nothing to report.

Requests for Proposal were issued for the Oro Hondo Fan, Deep Well Pump and LZ Davis Infrastructure Improvements projects in November. Proposals are under review.

Xenon inventory records were provided to Mike Headley for a visual inspection of cylinders at SLAC. SDSTA's records matched the supply at SLAC.

Summary of Contracts Awarded by SDSTA in November

Contract No.	Contractor/Vendor	Type	Project
2014-30	Johnson Controls Inc.	CO#6	3yr Scheduled Maintenance
2012-32	Pacific Hide and Fur Co.	CO#7	Waste Steel Salvage
2015-13	Stone Land Services	CO#7	Property Rights Research and Title Work
2015-30	Baker Timber Products	CO#3	Timber Trimming & Roadway Maintenance
2014-06	Black Hills Physical Therapy	CO#6	Physical Therapy & Ergonomic Evaluations,
2014-01A	The Alaris Group, Inc.	CO#6	Occupational Medicine Support
2017-19	American Engineering Testing	CO#1	Environmental Assessment, Machine Shop
2015-29	Amick Sound	CO#3	Scheduled Testing/Inspections; Maintain &
2017-26	CVD Construction Inc.	CO#1	General Services
2017-35	Ainsworth Benning Const.	Contract	Hazard Mitigation
2017-36	Horsley Specialties, Inc.	Contract	Asbestos Remediation Projects
2017-11	Bickmore	CO#2	Risk Management Consulting

Purchase Orders (POs): 145 POs were issued in November totaling **\$159,468.86**.

Warehouse Inventory: Warehouse inventory on November 30, 2017 totaled **\$211,446.40**.

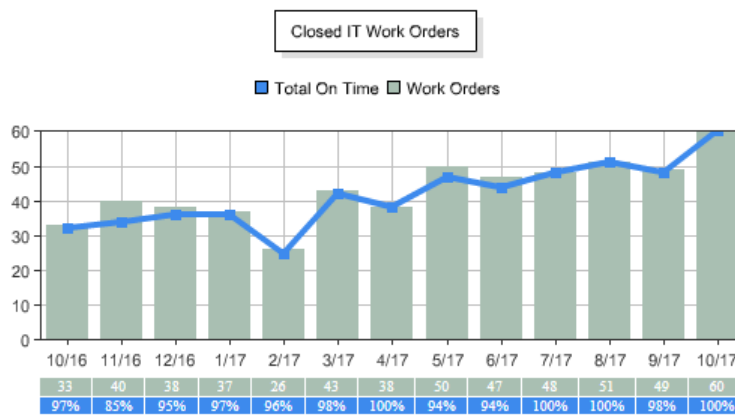
Information Technology

Projects

- UPS battery replacement in server room was completed Nov 3.
- IT Support Technician James Mitchell completed guide training.
- A blog on safe browsing habits was distributed.
- ESH requested additions were made to the science user account form.
- ERC room reconfiguration was completed as requested by Tom Regan.
- A meeting was scheduled with Operations staff and Johnson Controls to review the proposed Application & Data Server extended application to the Metasys building management system.
- Reviews and 2018 IT team goals were completed this month.
- Participated in ESH director interviews.

Daily Activities

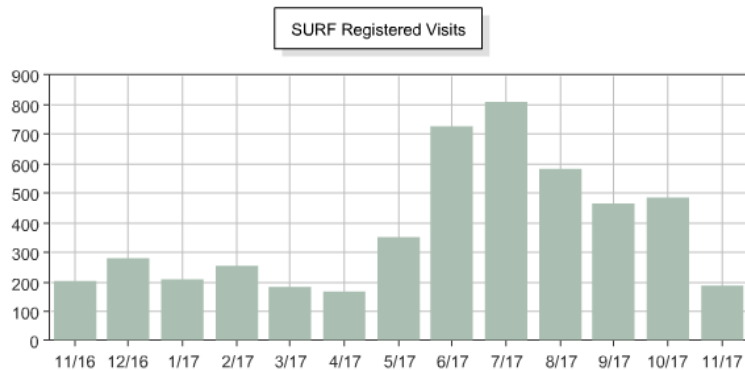
In addition to work order activity, IT monitors and reviews wireless and general network activity and counts, network hardware readiness, VPN Remote Access logs, Firewall logs, and establishes new VPN and DocuShare accounts for individuals and user groups, as requested.



Help Desk Activities (measured in Work Orders)

November Events

In November, a total of 190 Visitors, Contractors and Users visited the lab; a decrease of 297 people from last month. The November Visitor Log Report was submitted electronically to the SD Fusion Center/Homeland Security utilizing the database reporting tool.



Number of Visitors, Users and Contractors On-Site

Logistical and administrative support were provided for the following events and meetings in November:

- Nov 2: FBI Special Agent Matt Weber Underground Tour
- Nov 3: SURF All Hands Meeting
- Nov 20: ESH Director candidate #2 presentation
- Nov 23: Lunch catered for SDSTA crews working on Thanksgiving Day
- Nov 27-30: Work Planning and Controls/ATP Process Program Review
- Nov 29: Fermilab meeting with SD Dept of Revenue

Planning continues for upcoming meetings and events in December:

- Dec 6: Lead-Deawood Community Leaders Update and Underground Tours
- Dec 6 & 13: ERT Appreciation Luncheon
- Dec 11-15: Emergency Management Program Review
- Dec 13-14: KAJV Value Engineering Workshop (*rescheduled from November*)
- Dec 14: SDSTA Board of Directors Meeting and Luncheon
- Dec 19-20: KAJV Pre-Bid Meeting
- Dec 21: Ross Milestone Celebratory Luncheon

Staff attended additional ManagerPlus webinars in November; Monthly Researcher hours were tracked and Science training records entered; monthly invoices were coded for the Finance Department; multiple purchase orders were updated and closed for Procurement; monthly office supply order was received and sorted; tool box talks and work shift documentation were sorted and scanned; Facility Infrastructure/ expense reports were completed; digital display information was updated. Incident Checklist cards were laminated, various binders created and documents bound for the ESH Department. The monthly site access report was reviewed to verify normal activity at the Warehouse, Server Room and Surface Lab.

The SDSTA and Fermilab Global Services processes for ID badging were reviewed in detail in October to identify areas of differences and opportunities to align for the LBNF/DUNE project. Progress continues on all sides with necessary additional steps to be taken towards implementation to badge LBNF contractors.

November monthly reports for Fermilab and SDSTA were compiled, edited and distributed. Preparation continues for the upcoming SDSTA board meeting to be held December 14. The SDSTA Policies and Procedures Manual redesign project is 90% complete.

Finance and Human Resources

Included in the Financial Report are the following:

- SDSTA SURF Services FY2018 SPA Curve as of November 2017 (included as Appendix B)
- SDSTA Staffing Plan by Funding Source as of November 2017 (included as Appendix C)
- Financial Summary (included as Appendix D)
 - Balance Sheet as of November 2017
 - Comprehensive Statement of Income November 2017
 - Comparative Balance Sheet – November 2017 vs. November 2016
 - Comparative Statement of Income – November 2017 vs. November 2016
 - Available Resources as of November 2017
 - Operating Budget Summary
 - CAPEX Budget Summary
 - November 2017 and YTD CAPEX Budget – actual vs. budget

SDSTA SURF Services FY2017 Scheduled Performed Actual (SPA) Curve

This graph represents an analysis of the SURF Services subcontract No. 629760 scheduled funding compared to actual. The report shows funding through November 2017 along with information related to Funded-to-Date dollars, Scheduled dollars, Performed dollars and Actual dollars by month. This subcontract will be continued for support from October 2016 through June 2018 until an additional five-year contract can be negotiated with Fermi. Actual dollars represent actual invoices for the months sent to Fermi Research Alliance LLC for reimbursement. For November, the invoices totaled \$1,160,781 which is higher than the anticipated reimbursements of \$1,144,344 by \$16,437. Cumulative expenses are at \$16,494,410 which is lower than the budgeted \$16,991,464 by \$497,054.

Balance Sheet Items

Cash in Local Checking—Total on hand at November 30, 2017 was \$1,357,911; up from last month by \$292,972. Funds on hand were necessary to pay employee medical/life/vision insurance due December 1. The balance also contains funds received from federal contracts late in the month on open accounts receivable.

Cash with State Treasurer—Total balance of \$12,534,541. The balance is unchanged from last month.

Billed Accounts Receivable (A/R)—Billed A/R represents any open invoices based on contracts from sources such as LBNL, Fermilab, other smaller contracts from other universities and Barrick-Homestake Mining Company. Total is at \$1,955,046; down from last month by \$112,623. Included in the balance are open invoices to LBNL for \$151,099; representing invoices for the Large Underground Xenon (LUX) subcontract and LUX-ZEPLIN (LZ) engineering support and a new (LZ) Operations contract. Additional open invoices include \$1,787,439 from Fermilab primarily from the SURF Services subcontract and the Ross Shaft Rehabilitation work. Two invoices (final billing of employee benefit rate and indirect cost rate actuals for FY2017) are past due for a total of \$296,535. These are still in review by Fermi. Additionally, there are open receivables for \$7,883 from small university subcontracts, Barrick/Homestake for \$8,245, and \$380 from Xilinx, Inc., the commercial organization that has established an experiment located near the 4850L Davis Campus.

Unbilled A/R—Balance at \$44,239. Unbilled A/R represents items that have not been billed on various contracts. The payroll from pay end date November 24, 2017 (paid on December 1, 2017) was not invoiced in November on the Ross Shaft Rehabilitation. This amount will be invoiced in December. November's balance has decreased slightly by \$22,219.

Other A/R—Current balance of \$64,583. This balance represents any Interest Receivable and Miscellaneous Accounts Receivable. The balance increased by \$8,451, which includes the interest accrual for November as well as activity for noncontract receivables.

Inventory/Supplies—Balance at \$2,445,403 for fixed assets being stored but not in service. The balance is unchanged from the previous month.

Inventory Warehouse/Personal Protective Equipment (PPE)—Current balance of \$31,505. This balance represents the warehouse inventory that was purchased by SDSTA prior to federal funding. The balance is unchanged from the previous month.

Other Current Assets—This listing on the balance sheet represents the balances of both prepaid insurance—\$331,284 and prepaid other—\$62,297. Total balance of \$393,581 is down from last month by \$46,189. This decrease represents the monthly insurance expense along with the expensing of various prepaid items in November.

Fixed Assets—Total of \$83,942,559 (net of depreciation through November 30, 2017). Fixed assets are unchanged for the month except for depreciation which results in a decrease of \$166,681.

Work in Progress—This balance represents the current fiscal year progress being made using Sanford/SDSTA Funds to support the budgeted projects on the CAPEX budget less any items that are being capitalized within the Fixed Asset designation or Xenon Purchased. Current balance has increased by \$95,041 to \$1,165,871.

Capital Lease—This balance of \$128,072 represents the deep pump system capital lease. The balance has decreased \$15,770. The lease through AmWest, Inc. was renegotiated to include transference of property to SDSTA at the end of the lease term in January 2018. The rental payments are being directly charged to the LBNL federal subcontract. Per the subcontract, the pumping system will become the property of the federal government at the end of the lease period. The equipment will be fully expensed over the period of the lease at which time it will be removed (along with the lease liability) from the SDSTA's balance sheet.

Pension Deferred Outflows—This designation on our Balance Sheet reflects the requirements related to the Governmental Accounting Standards Board (GASB) No. 68 and No. 71 in reference to pensions. SDSTA is required to report the net pension asset or liability on the face of our financials along with related deferred inflows and outflows. The State's retirement system is no longer fully funded. The actuarially accrued liability of the fund is more than the assets of the fund. Therefore, for fiscal year 2017 we have a Net Pension Liability rather than Net Pension Asset. The balance Pension Deferred Outflows shown as a noncurrent asset is \$4,174,730 created by fiscal year 2017 final entries. GASB No. 68 requires that the amount reported as deferred outflows and inflows as they relate to the net difference between the projected and actual earnings on pension plan investments should be netted for reporting purposes. The recorded amounts have been summarized as Pension Deferred Outflows. This balance is unchanged from the previous statement.

Xenon Purchased—Balance of \$5,040,356 represents the value of xenon purchased for future use by experiments. The xenon inventory is considered a non-current asset and includes all the purchases through fiscal year end 2017. The balance has not changed from the previous statement.

Total Assets—Total of \$113,278,397. This balance is up from last month by \$32,981; which represents the net activity as listed above.

Accounts Payable—Our Total Accounts Payable balance of \$813,907 at the end of the month compared to last month has increased slightly by \$157,586. This increase is primarily to an increased amount owed to TruNorth Steel for the Ross Shaft Rehab.

Accrued Payroll Liabilities—Current balance of \$1,050,707 has increased by \$11,469 from last month. This represents the net change between earned vacation and vacation taken and other changes in employee benefit related liabilities.

Long Term Accrued Employee Benefit/Lease—This balance of \$128,072 denotes the liability associated with the capital lease for the deep pump system from AmWest, Inc. This balance has decreased by \$15,770 for the months' reduction in the lease amount owed.

Long Term Xenon Notes Payable—This designation represents \$2M of funding received from the South Dakota Community Foundation (SDCF) as well as an additional \$1M received in January 2017 from the South Dakota State University Foundation (SDSUF) and \$1M received in February 2017 from the University of South Dakota Foundation (USDF). The \$4,000,000 balance is designated for purchasing xenon for experiment use at Sanford Lab.

Pension Deferred Inflows—This classification reflects the requirements of GASB No. 68 and No. 71, as discussed earlier. The State’s retirement system is no longer fully funded. The actuarially accrued liability of the fund is more than the assets of the fund. Therefore, for fiscal year 2017 we have a Net Pension Liability rather than Net Pension Asset. The balance of \$1,698,193 represents our portion of the Net Pension Liability as it relates to the pension plan with the South Dakota Retirement System.

Total Liabilities—Total Liabilities increased by \$153,284 (from \$7,537,594 to \$7,690,878), which reflects the net activity listed above.

Total Equity—Decrease to \$105,587,519 from the previous month \$105,707,823.

Total Liabilities & Equity—Increase to \$113,278,397 from the previous month of \$113,245,416.

Statement of Income Items

On the SDSTA’s Statement of Income, the DOE Subcontracts are consolidated into one line item on the report. Included in this amount are various subcontracts from LBNL, Fermi National Accelerator Laboratory (FNAL), as well as a small contract for the MAJORANA project with the University of North Carolina. Total revenue for this fiscal year through November 2017 is \$8,512,895 (increase from October of 1,677,793).

National Science Foundation (NSF)/National Aeronautics & Space Administration (NASA) Subcontracts—Total revenue through November 2017 from this funding is \$9,336 (increase from October of \$1,989). The balance represents revenue from the South Dakota School of Mines and Technology (SDSM&T) for CASPAR.

State Revenue—Year-to-date State Revenue equals \$194. This was received from a small subcontract from Black Hills State University.

Contributions & Donations—The Great Plains Education Foundation contributed \$125,000 in July for the education efforts at the SDSTA.

Interest income recorded for the current fiscal year on State Funds is at \$53,341. This represents interest accruing at 1% on the cash held by the state on behalf of the SDSTA.

Direct Costs are then listed on the Statement of Income. The classifications for Unallowable Costs and Indirect Costs are listed as well on this report to follow the federal contracting format. Direct Costs/Unallowable Costs are at \$5,449,828 for the current fiscal year. Indirect Costs including fringe benefits are at \$3,664,321. Costs are higher than revenue by \$412,646. Yet, the unbilled payroll from pay end date November 24, 2017 of \$44,239 has not been reflected in revenue. As explained earlier this will be accomplished in December. Other Income is at \$275,858 which represents miscellaneous income received from Xilinx and small amounts from Barrick. Net income through November after Reclass Increase in Net Assets is at \$690,311.

Comparative Balance Sheet

Significant differences include Total Cash with State Treasurer is lower by \$1,309,336 from this time last year as funds were expended over the 12-month period. Other notable differences exist for Billed A/R which has decreased by \$1,111,740 due to payments being received on various contracts as well as no longer having the design contract with Arup. Total Fixed Assets have increased by \$193,214 due to capitalizing additional fixed asset for fiscal year 2017. Pension Deferred Outflows has decreased by \$2,113,124 due to no longer having a Net Pension Asset (discussed earlier). Xenon Purchased has increased by \$3,433,693 for the purchases made during fiscal year 2017. In summary, Total Assets have decreased by \$826,369. Total Current Liabilities have decreased by \$977,448 from this time last year. This decrease is primarily due to currently owing less to vendors such as TruNorth Steel and not owing Arup for design services. Total Other Liabilities have increased by \$373,328 primarily due to Xenon Notes that have increased for the \$2M receipt from South Dakota State University Foundation loan and the University of South Dakota loan. Yet, Pension Deferred Inflows has decreased showing the Net Pension Liability for fiscal year 2017 year end. Total Equity has decreased slightly by \$222,249 from this time last year. In summary, Total Liabilities & Equity have decreased by \$826,369. Restricted Funds are lower than this same time last year, but Investment in General Fixed Assets as well as Unrestricted Funds are both higher when comparing the two time frames.

Comparative Profit/Loss

Total Revenue for year-to-date November 2017 compared to year-to-date November 2016 has decreased by \$3,124,027. DOE subcontract revenue has decreased by 26.4% due to no longer having the design contract with Arup. Direct Costs and Indirect Costs for year-to-date November 2017 compared to this time last year show a combined decrease of \$3,503,740 (27.7% decrease). This is due to incurring less expenses this fiscal year for the Arup design contracts. The contracts for design with Arup have been transferred to Fermi. Indirect Costs are also lower by \$437,663 than last year at this same time. Other Income is higher for the comparative time periods primarily due to receiving funding for the Davis Bahcall education program and receiving funding from Homestake Mining Company for one half of the expenses for asbestos abatement on the recently purchased Ellison Hill property. Net Income/Loss for the comparative time periods shows an increase in income of \$565,610.

Available Resources

This report reflects our available cash/accounts receivable after noting the restricted cash balances in the Indemnification and Mine Closure accounts, and funds held for Experiments—xenon purchase, experiment infrastructure upgrades and interest for investors. This report has been restructured to better reflect our available cash and (short term) accounts receivable as compared to our current liabilities including accrued payroll liabilities. It is important to include receivables as many the items in accounts payable are invoiced on our current federal contracts. \$2,395,875 is available after noting our current obligations. It is also important to note that our accrued payroll liabilities include accrued vacation and sick pay. Therefore, the current report better reflects our available resources compared to current obligations.

Operating Budget Analysis

This report is separated into three sections: SDSTA-funded activities, Federal & State funded activities and Indirect expenses that benefit various activities. Total operating expenses are slightly over budget for November 2017 by \$2,016. This overage is immaterial. Year-to-date figures are still under budget by \$555,222. Indirect Charges Other are over budget as this category includes depreciation expense (no actual cash outlay).

Capital Expenditure Budget Analysis

Our current capital expenditure projects have been condensed and are listed from CAP2014-01—CAP2017-02 with various breaks in the numbering sequence. Total project dollars have been reduced to \$4,677,160. All projects with the exception of the LZ Surface & Facility Upgrades and LZ Xenon Gas Purchase are funded by the balance of Sanford Funds as directed by the Fifth and Sixth Amendments to the Homestake Gift Agreement, a small amount of scrap metal funding, and funding from private fundraising activities. Funding for the LZ Surface & Facility Upgrades and LZ Xenon Gas Purchase was secured from the GOED granting \$6,000,000 over three years. Additionally, loan documents have been executed for \$2,000,000 each from the South Dakota Community Foundation, the South Dakota State University Foundation and the University of South Dakota Foundation for xenon purchases. In November, we spent \$95,162 on our CAPEX projects which is slightly higher than the budgeted \$72,780. Year-to-date we have spent \$1,035,722 on these projects.

Human Resources

There are currently 116 full time employees and 12 temporary staff, primarily Emergency Response Team members. Interviews are taking place for the Facilities Technician position vacated by Oren Loken's resignation. Resumes are being reviewed for the open ERT Lead/Site Safety Specialist position. Engineering Technical Associate Jacob Davis will start employment on December 11. An applicant has been selected and accepted for the ESH Director position. More information will be available once the background check and physical are complete.

APPENDIX

Communications Department Photo Appendix A



Top: Crew members working on the Ross Shaft reached a major milestone when they installed sets down to the 4850 Level in November.

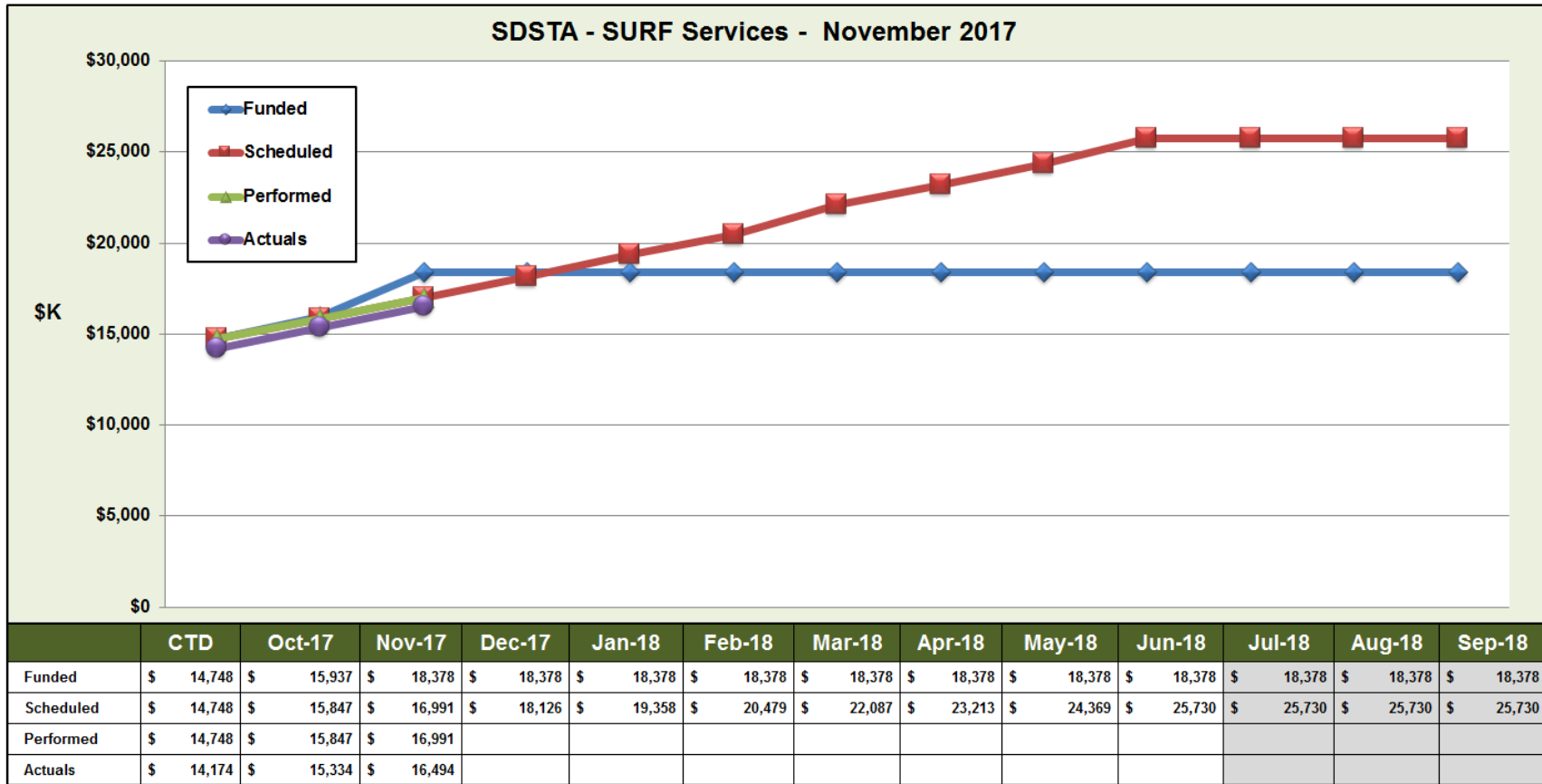
Center left: Rick Tinnell supervises a slung load at the Yates Shaft. LZ will need to lower several tanks down the shaft and through the tight common corridor at the Davis Campus. To prepare for the task a test vehicle was built and lowered to the 4850 Level.

Center right: Holes are drilled for the SIGMA-V experiment.

Bottom right: Xilinx moved the test arrays to a new location in the mechanical room at the Davis Campus to accommodate additional arrays.



Finance & HR Department Appendix B



**DOE SDSTA FY 2017 SPA Curve
November 2017**

Finance & HR Department Appendix C

FTE Report - All Fund Sources - FY18 - November 2017

Revised: December 5, 2017

Source/WBS	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18
SDSTA	0.70	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Administration	0.70	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
DOE SURF SERVICES	73.15	73.15	73.15	73.65	73.65	73.65	73.65	73.65	73.65	73.65	73.65	73.65
Administration	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
ESH	11.40	11.40	11.40	11.40	11.40	11.40	11.40	11.40	11.40	11.40	11.40	11.40
Engineering	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55
Science	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15
Operations												
Management	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Ross Shaft	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Yates Shaft	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Hoist Operations	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Hoist Maintenance	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
Ventilation	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Underground Maintenance	7.50	7.50	7.50	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Water Treatment	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15
Dewatering	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Electrical Power Distribution	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
Cyberinfrastructure	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Buildings and Grounds	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
Equipment Maintenance	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
Davis Campus	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
ROSS SHAFT (DOE)	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
LZ Project	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
LZ Operations	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
LBNF / DUNE	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95
INDIRECT	16.10	16.10	16.10	16.10	16.10	16.10	16.10	16.10	16.10	16.10	16.10	16.10
Grand Total	123.10	122.60	122.60	123.10	123.10	123.10	123.10	123.10	123.10	123.10	123.10	123.10

SDSTA Staffing Plan by Funding Source November 2017

APPENDIX D—FINANCIAL SUMMARIES

REPORT DATE 12/08/17

SOUTH DAKOTA SCIENCE & TECHNOLOGY

12:19

PAGE 0001

DIVISION: ALL

BALANCE SHEET

ASSETS

		AS OF 11/30/17

CURRENT ASSETS		
First Interstate Checking	\$	1,347,393.39
First Interstate Other		10,517.95

Total in Local Checking		1,357,911.34
SD Treas: Indemnification		7,500,000.00
SD Treas: Mine Closure		1,415,782.17
SD Treas: Operating		480,685.27
SD Treas: Sanford Gift #2		322,567.97
SD Treas: Experiments		2,815,505.86

Total with SD Treasurer		12,534,541.27
Billed A/R		1,955,045.99
Unbilled A/R		44,239.19
Other A/R		64,582.51
Inventory - Supplies		2,445,403.23
Inventory - Warehouse		31,504.83
Other Current Assets		393,580.74

Total Current Assets		18,826,809.10
FIXED ASSETS		
Land, Underground & Other		12,633,473.13
Bldgs & Infrastructure		10,078,678.68
Improvements		63,426,534.26
Computer Equipment		431,565.17
Equipment & Fixtures		10,895,916.81
Accum Depr & Amort		(13,523,608.96)

Total Fixed Assets		83,942,559.09
OTHER ASSETS		
Work in Process		1,165,870.80
Equipment - Capital Lease		128,071.50
Pension Deferred Outflows		4,174,730.00
Xenon Purchased		5,040,356.11

Total Other Assets		10,509,028.41
TOTAL ASSETS		
	\$	=====
		113,278,396.60
		=====

DIVISION: ALL

BALANCE SHEET

LIABILITIES & EQUITY

		AS OF 11/30/17

CURRENT LIABILITIES		
Accounts Payable	\$	798,102.80
Other Payables		15,804.00

Total Accounts Payable		813,906.80
Accrued Payroll Liab		1,050,706.52

Total Current Liabilities		1,864,613.32
OTHER LIABILITIES		
LT Accrued EB/Lease		128,071.50
LT Xenon Notes Payable		4,000,000.00
Pension Deferred Inflows		1,698,193.00

Total Other Liabilities		5,826,264.50
EQUITY		
Restricted: Indemnificati		7,500,000.00
Restricted: Mine Closure		1,415,782.17
Restricted: Sanford Gift2		322,567.97
Restricted: Pension		2,476,537.00
Restricted: Experim. Int.		2,753,584.00

Total Restricted Funds		14,468,471.14
Investment in Gen FA		83,942,559.09
Unrestricted Funds		7,176,488.55

Total Equity		105,587,518.78

TOTAL LIABILITIES & EQUITY	\$	113,278,396.60
		=====

ALL

STATEMENT OF INCOME

FOR THE PERIOD ENDING 11/30/17

	YR-TO-DATE

REVENUE	
DOE Subcontracts	\$ 8,512,895.48
NSF/NASA Subcontracts	9,336.44
State Revenue	193.77
Contributions & Donations	125,000.00
Checking Interest	735.75
Interest Income	53,340.99

TOTAL REVENUE	8,701,502.43
DIRECT COSTS	
Direct Labor	2,676,314.05
ERT Labor	15,598.22
Board of Directors	3,018.12
Capital Outlay >\$5K	103,589.80
Contractual Svcs	1,011,971.93
Inventory	82,263.03
Supplies	461,167.55
Travel - Domestic	26,795.27
Travel - Foreign	10,938.08
Utilities	806,627.61
Other Direct Costs	107,430.05
Unallow/Unbill Costs	144,114.43

TOTAL DIRECT COSTS	5,449,828.14
INDIRECT COSTS	
Fringe Benefits	1,638,702.73
Overhead	2,025,617.91

TOTAL INDIRECT COSTS	3,664,320.64

GROSS PROFIT/LOSS ()FROM OPERATIONS	(412,646.35)

OTHER INCOME	
Water Treatment	56,584.82
Miscellaneous Income	217,482.29
Other Operating Income	1,791.10

TOTAL OTHER INCOME	275,858.21
OTHER EXPENSES	
Loss(Gain) on Sale of FA	10,441.91
Reclass Incr Net Assets	(837,540.59)

TOTAL OTHER EXPENSES	(827,098.68)
	=====
NET INCOME/LOSS ()	\$ 690,310.54

DIVISION: ALL

COMPARATIVE BALANCE SHEET

ASSETS

	AS OF 11/30/17	AS OF 11/30/16	\$ CHANGE	% CHANGE
CURRENT ASSETS				
First Interstate Checking	\$ 1,347,393.39	\$ 1,167,542.34	\$ 179,851.05	15.40%
First Interstate Other	10,517.95	15,214.00	(4,696.05)	-30.87%
	-----	-----	-----	-----
Total in Local Checking	1,357,911.34	1,182,756.34	175,155.00	14.81%
SD Treas: Indemnification	7,500,000.00	7,500,000.00	-	0.00%
SD Treas: Mine Closure	1,415,782.17	1,398,522.89	17,259.28	1.23%
SD Treas: Operating	480,685.27	361,693.54	118,991.73	32.90%
SD Treas: Sanford Gift #2	322,567.97	1,099,096.97	(776,529.00)	-70.65%
SD Treas: Experiments	2,815,505.86	3,484,563.84	(669,057.98)	-19.20%
	-----	-----	-----	-----
Total with SD Treasurer	12,534,541.27	13,843,877.24	(1,309,335.97)	-9.46%
Billed A/R	1,955,045.99	3,066,785.76	(1,111,739.77)	-36.25%
Unbilled A/R	44,239.19	6.93	44,232.26	638272.15%
Other A/R	64,582.51	224,900.52	(160,318.01)	-71.28%
Inventory - Supplies	2,445,403.23	2,408,322.74	37,080.49	1.54%
Inventory - Warehouse	31,504.83	34,559.52	(3,054.69)	-8.84%
Other Current Assets	393,580.74	354,616.80	38,963.94	10.99%
	-----	-----	-----	-----
Total Current Assets	18,826,809.10	21,115,825.85	(2,289,016.75)	-10.84%
FIXED ASSETS				
Land, Underground & Other	12,633,473.13	12,398,635.03	234,838.10	1.89%
Bldgs & Infrastructure	10,078,678.68	8,881,327.62	1,197,351.06	13.48%
Improvements	63,426,534.26	63,284,094.82	142,439.44	0.23%
Computer Equipment	431,565.17	461,416.25	(29,851.08)	-6.47%
Equipment & Fixtures	10,895,916.81	10,551,622.05	344,294.76	3.26%
Accum Depr & Amort	(13,523,608.96)	(11,827,750.50)	(1,695,858.46)	14.34%
	-----	-----	-----	-----
Total Fixed Assets	83,942,559.09	83,749,345.27	193,213.82	0.23%
OTHER ASSETS				
Work in Process	1,165,870.80	1,076,942.86	88,927.94	8.26%
Equipment - Capital Lease	128,071.50	268,134.61	(140,063.11)	-52.24%
Pension Deferred Outflows	4,174,730.00	6,287,854.00	(2,113,124.00)	-33.61%
Xenon Purchased	5,040,356.11	1,606,663.11	3,433,693.00	213.72%
	-----	-----	-----	-----
Total Other Assets	10,509,028.41	9,239,594.58	1,269,433.83	13.74%
	=====	=====	=====	=====
TOTAL ASSETS	\$ 113,278,396.60	\$ 114,104,765.70	\$ (826,369.10)	-0.72%
	=====	=====	=====	=====

DIVISION: ALL

COMPARATIVE BALANCE SHEET

LIABILITIES & EQUITY

	AS OF 11/30/17	AS OF 11/30/16	\$ CHANGE	% CHANGE
CURRENT LIABILITIES				
Accounts Payable	\$ 798,102.80	\$ 1,883,405.22	\$ (1,085,302.42)	-57.62%
Other Payables	15,804.00	15,319.94	484.06	3.16%
	-----	-----	-----	-----
Total Accounts Payable	813,906.80	1,898,725.16	(1,084,818.36)	-57.13%
Accrued Payroll Liab	1,050,706.52	943,335.78	107,370.74	11.38%
	-----	-----	-----	-----
Total Current Liabilities	1,864,613.32	2,842,060.94	(977,447.62)	-34.39%
OTHER LIABILITIES				
LT Accrued EB/Lease	128,071.50	268,134.61	(140,063.11)	-52.24%
LT Xenon Notes	4,000,000.00	2,000,000.00	2,000,000.00	100.00%
Pension Deferred Inflows	1,698,193.00	3,184,802.00	(1,486,609.00)	-46.68%
	-----	-----	-----	-----
Total Other Liabilities	5,826,264.50	5,452,936.61	373,327.89	6.85%
	-----	-----	-----	-----
TOTAL LIABILITIES	7,690,877.82	8,294,997.55	(604,119.73)	-7.28%
EQUITY				
Restricted: Indemnificati	7,500,000.00	7,500,000.00	-	0.00%
Restricted: Mine Closure	1,415,782.17	1,398,522.89	17,259.28	1.23%
Restricted: Sanford Gift2	322,567.97	1,099,096.97	(776,529.00)	-70.65%
Restricted: Pension	2,476,537.00	3,103,052.00	(626,515.00)	-20.19%
Restricted: Experim. Int.	2,753,584.00	3,484,563.84	(730,979.84)	-20.98%
	-----	-----	-----	-----
Total Restricted Funds	14,468,471.14	16,585,235.70	(2,116,764.56)	-12.76%
Investment in Gen FA	83,942,559.09	83,749,345.27	193,213.82	0.23%
Unrestricted Funds	7,176,488.55	5,475,187.18	1,701,301.37	31.07%
	-----	-----	-----	-----
TOTAL EQUITY	105,587,518.78	105,809,768.15	(222,249.37)	-0.21%
	=====	=====	=====	=====
TOTAL LIABILITIES & EQUITY	\$ 113,278,396.60	\$ 114,104,765.70	\$ (826,369.10)	-0.72%
	=====	=====	=====	=====

COMPARATIVE STATEMENT OF INCOME

FOR THE PERIOD ENDING 11/30/17

	YEAR TO DATE	PRIOR YEAR TO DATE	\$ CHANGE	% CHANGE
REVENUE				
DOE Subcontracts	\$ 8,512,895.48	\$ 11,624,602.88	\$ (3,111,707.40)	-26.77%
NSF/NASA Subcontracts	9,336.44	5,038.47	4,297.97	85.30%
State Revenue	193.77	12,000.00	(11,806.23)	-98.39%
Contributions & Donations	125,000.00	125,000.00	-	0.00%
Checking Interest	735.75	100.03	635.72	635.53%
Interest Income	53,340.99	58,787.71	(5,446.72)	-9.27%
TOTAL REVENUE	8,701,502.43	11,825,529.09	(3,124,026.66)	-26.42%
DIRECT COSTS				
Direct Labor	2,676,314.05	2,975,161.48	(298,847.43)	-10.04%
ERT Labor	15,598.22	8,505.00	7,093.22	83.40%
Board of Directors	3,018.12	1,961.09	1,057.03	53.90%
Capital Outlay >\$5K	103,589.80	574,651.00	(471,061.20)	-81.97%
Contractual Svcs	1,011,971.93	2,934,088.48	(1,922,116.55)	-65.51%
Inventory	82,263.03	84,954.89	(2,691.86)	-3.17%
Supplies	461,167.55	794,013.98	(332,846.43)	-41.92%
Travel - Domestic	26,795.27	30,696.96	(3,901.69)	-12.71%
Travel - Foreign	10,938.08	49,727.42	(38,789.34)	-78.00%
Utilities	806,627.61	802,807.72	3,819.89	0.48%
Other Direct Costs	107,430.05	121,910.99	(14,480.94)	-11.88%
Unallow/Unbill Costs	144,114.43	137,426.11	6,688.32	4.87%
TOTAL DIRECT COSTS	5,449,828.14	8,515,905.12	(3,066,076.98)	-36.00%
INDIRECT COSTS				
Fringe Benefits	1,638,702.73	1,612,734.64	25,968.09	1.61%
Overhead	2,025,617.91	2,489,249.29	(463,631.38)	-18.63%
TOTAL INDIRECT COSTS	3,664,320.64	4,101,983.93	(437,663.29)	-10.67%
GROSS PROFIT/LOSS ()	(412,646.35)	(792,359.96)	379,713.61	-47.92%
OTHER INCOME				
Water Treatment	56,584.82	80,111.11	(23,526.29)	-29.37%
Miscellaneous Income	217,482.29	60,553.33	156,928.96	259.16%
Other Operating Income	1,791.10	1,266.50	524.60	41.42%
TOTAL OTHER INCOME	275,858.21	141,930.94	133,927.27	94.36%
OTHER EXPENSES				
Loss(Gain) on Sale of FA	10,441.91	-	10,441.91	100.00%
Reclass Incr Net Assets	(837,540.59)	(775,129.55)	(62,411.04)	8.05%
TOTAL OTHER EXPENSES	(827,098.68)	(775,129.55)	(51,969.13)	6.70%
NET INCOME/LOSS ()	\$ 690,310.54	\$ 124,700.53	\$ 565,610.01	453.57%

South Dakota Science & Technology Authority
Available Resources
11/30/2017

Cash Total Checking	\$ 1,347,393
Cash With State Treasurer	<u>\$ 12,534,541</u>
Total Cash	\$ 13,881,934
Less: Restricted Funds	
Indemnification/Mine Closure	\$ (8,915,782)
Experiments (Xenon, Interest, Infrastructure)	<u>\$ (2,815,506)</u>
Total Cash Available for Infrastructure Upgrades and Authority Operations	\$ 2,150,646
Plus: Accounts Receivable Billed	\$ 1,955,046
Accounts Receivable Unbilled	\$ 44,239
Less: Current Liabilities (Accounts Payable & Accrued Payroll)	<u>\$ (1,754,056)</u>
(not including accts. pay. for Experiment funding)	
Available Cash	<u><u>\$ 2,395,875</u></u>

SDSTA Operating Budget Summary FY2017

Actual vs Budget

Nov. 2017 & YTD

	Nov. 2017	Budget	\$ Over/Under		Actual YTD	YTD Budget	\$ Over/Under		% Remaining
			Budget	% of Budget			Budget	% of Budget	
100%									
SDSTA (Authority) Direct Charges									
Board of Directors	\$17,280.00	\$19,900.00	\$2,620.00	86.83%	\$93,908.00	\$99,500.00	\$5,592.00	94.38%	5.62%
Executive Office	\$23,824.00	\$14,766.00	-\$9,058.00	161.34%	\$79,528.00	\$73,577.00	-\$5,951.00	108.09%	-8.09%
Science Center E & O	\$0.00	\$0.00	\$0.00	0.0%	\$11,147.00	\$25,749.00	\$14,602.00	43.29%	56.71%
Science Liaison	-\$919.00	\$0.00	\$919.00	100.0%	-\$460.00	\$0.00	\$460.00	100.00%	100.00%
Sanf.L.Visitor C. (Director)	\$2,240.00	\$4,340.00	\$2,100.00	51.61%	\$17,196.00	\$21,503.00	\$4,307.00	79.97%	20.03%
Subtotal	\$42,425.00	\$39,006.00	-\$3,419.00	108.77%	\$201,319.00	\$220,329.00	\$19,010.00	91.37%	8.63%
Federal/State Funding - Direct Charges									
Fermi P.O.#625691 B/Site Final Des.	-	\$0.00	\$0.00	0.0%	\$124,417.00	\$124,417.00	\$0.00	100.00%	0.00%
Fermi P.O.#625692 Pre Excav.F.D.	-	\$0.00	\$0.00	0.0%	\$164,709.00	\$164,709.00	\$0.00	100.00%	0.00%
Fermi P.O.Miscellaneous	\$1,204.00	\$1,580.00	\$376.00	76.2%	\$3,204.00	\$3,580.00	\$376.00	89.50%	10.50%
Fermi P.O.#631450 Engin. Services	\$0.00	\$0.00	\$0.00	0.0%	\$52,024.20	\$79,499.00	\$27,474.80	65.44%	34.56%
Fermi P.O.#639366 Prof. Services	\$22,910.00	\$26,908.00	\$3,998.00	85.14%	\$43,475.00	\$53,531.00	\$10,056.00	81.21%	18.79%
Fermi C#629760 Bridge OPS	\$925,943.00	\$911,464.00	-\$14,479.00	101.59%	\$4,644,284.00	\$4,765,821.00	\$121,537.00	97.45%	2.55%
Fermi C#630223 Ross Rehab	\$341,975.00	\$359,025.00	\$17,050.00	95.25%	\$1,608,902.00	\$2,132,926.00	\$524,024.00	75.43%	24.57%
LBNL LUX C#6973786	\$0.00	\$0.00	\$0.00	0.00%	\$39,068.00	\$48,691.00	\$9,623.00	80.24%	19.76%
LBNL LUX/Zepplin C#7255146	\$37,362.00	\$48,838.00	\$11,476.00	76.5%	\$146,184.00	\$183,311.00	\$37,127.00	79.75%	20.25%
LBNL LZ Operations C#7355157	\$6,091.00	\$4,625.00	-\$1,466.00	131.7%	\$14,048.00	\$14,998.00	\$950.00	93.67%	6.33%
LBNL SIGMA-V C#7371823	\$15,652.00	\$15,274.00	-\$378.00	102.48%	\$29,336.00	\$30,547.00	\$1,211.00	96.04%	3.96%
MJD (Majorana) ORNL144149	\$2,545.00	\$2,600.00	\$55.00	97.89%	\$11,987.00	\$12,700.00	\$713.00	94.39%	5.61%
BHSU-UGCampus Gen.Serv.	\$0.00	\$200.00	\$200.00	0.0%	\$155.00	\$1,000.00	\$845.00	15.50%	84.50%
Sanf.Sci.Ed.Center - GOED Funded	\$34,869.00	\$33,500.00	-\$1,369.00	104.09%	\$198,480.00	\$217,166.00	\$18,686.00	91.40%	8.60%
SDSM&Tech CASPAR Gen.Serv.	\$1,579.00	\$2,666.00	\$1,087.00	59.23%	\$7,445.00	\$13,330.00	\$5,885.00	55.85%	44.15%
* Xilinx, Inc. P.O.#732495	\$299.00	\$500.00	\$201.00	59.8%	\$1,409.00	\$1,720.00	\$311.00	81.92%	18.08%
Subtotal	\$1,390,429.00	\$1,407,180.00	\$16,751.00	98.81%	\$7,089,127.20	\$7,847,946.00	\$758,818.80	90.33%	9.67%
Indirect Expenses									
Indirect Charges Personnel	\$130,872.00	\$131,602.00	\$730.00	99.45%	\$616,789.00	\$622,133.00	\$5,344.00	99.14%	0.86%
Indirect Charges Other	\$260,484.00	\$244,406.00	-\$16,078.00	106.58%	\$1,652,030.00	\$1,424,079.00	-\$227,951.00	116.01%	-16.01%
Subtotal	\$391,356.00	\$376,008.00	-\$15,348.00	104.08%	\$2,268,819.00	\$2,046,212.00	-\$222,607.00	110.88%	-10.88%
Totals	\$1,824,210.00	\$1,822,194.00	-\$2,016.00	100.11%	\$9,559,265.20	\$10,114,487.00	\$555,221.80	94.51%	5.49%
* Private Corporation (Commercial Group)									

SDSTA CAPEX Budget Summary FY17/18
Actual vs Budget
November 2017 & YTD

<u>Budget Area</u>	<u>Actual Month</u>	<u>FY2018 Monthly Budget</u>	<u>\$ Over/Under Budget</u>	<u>% of Budget</u>	<u>Actual YTD</u>	<u>FY2018 YTD Budget</u>	<u>\$ Over/Under Budget</u>	<u>% of Budget</u>	<u>% Remaining</u>
									100.00%
Operational CAPEX	\$ 95,162.06	\$ 72,780.00	\$ (22,382.06)	130.75%	\$ 1,035,721.59	\$ 4,677,160.00	\$ 3,641,438.41	22.14%	77.86%
TOTAL CAPEX	\$ 95,162.06	\$ 72,780.00	\$ (22,382.06)	130.75%	\$ 1,035,721.59	\$ 4,677,160.00	\$ 3,641,438.41	22.14%	77.86%

SD Science & Technology Authority
Operational CAPEX Budget
YTD FY2018 Actual vs Budget

Project #	Project Description	Nov. 2017 YTD	FY2018 Budget	\$ Over/UnderBudget	% of Budget	% Remaining
						100%
CAP2014-01	Sanford Visitor Center Sign/Display	\$ 6,963.93	\$ 5,268.00	\$ (1,695.93)	132.19%	-32.19%
CAP2014-05	CASPAR Experiment Development	\$ 79,850.19	\$ 79,850.00	\$ (0.19)	100.00%	0.00%
CAP2016-02	LZ Surface Facility Upgrades	\$ 161,364.34	\$ 251,329.00	\$ 89,964.66	64.20%	35.80%
CAP2016-03	LZ Xenon Gas	\$ 619,387.58	\$ 4,100,000.00	\$ 3,480,612.42	15.11%	84.89%
CAP2017-02	Ellison Option Asbestos Abatement	\$ 168,155.55	\$ 240,713.00	\$ 72,557.45	69.86%	30.14%
	Totals	\$ 1,035,721.59	\$ 4,677,160.00	\$ 3,641,438.41	22.14%	77.86%

SD Science & Technology Authority
Operational CAPEX Budget
Monthly Actual vs Budget

Project #	Project Description	Nov. 2017	Budget	\$ Over/UnderBudget	% of Budget
CAP2014-01	Sanford Visitor Center Sign/Display	\$ -	\$ -	\$ -	0.00%
CAP2014-05	CASPAR Experiment Development	\$ 62,463.06	\$ 62,463.00	\$ (0.06)	0.00%
CAP2016-02	LZ Surface Facility Upgrades	\$ 32,290.00	\$ 9,900.00	\$ (22,390.00)	326.16%
CAP2016-03	LZ Xenon Gas	\$ 625.00	\$ 417.00	\$ (208.00)	149.88%
CAP2017-02	Ellison Option Asbestos Abatement	\$ (216.00)	\$ -	\$ 216.00	0.00%
	Monthly Totals	\$ 95,162.06	\$ 72,780.00	\$ (22,382.06)	130.75%



DECLARATION OF SURPLUS PROPERTY

November 2, 2017

The South Dakota Science and Technology Authority (SDSTA) purchased a laptop computer and components for use by the Director of the Sanford Lab Homestake Visitor Center (SLHVC). SDSTA wishes to transfer ownership of the following assets to the SLHVC for its continued use:

Purchase Order #6155, 4/15/2015

Part #	Item Description	Purchase Price
3643110	Apple MBA BTO 13"	\$1,755.48
2735474	Apple USB Superdrive	\$80.54
2735491	Apple 45W Magsafe 2 Power Adapter	\$79.00
1907655	Apple Wrls Magic Mouse	\$70.49
2933543	MS OFFICE MAC HOME Bus 1 pk BLK	\$193.74
2816794	Apple 27" Thunderbolt Display	\$929.07
3100596	WD My Passport Ultra USB 1TB Blk	<u>\$67.37</u>
		\$3,175.69

The current value of these assets is approximately \$500.

The assets will be transferred to SLHVC by letter agreement pursuant to the existing Memorandum of Understanding.

I hereby declare the laptop and associated components to be Surplus Property. Dated at Lead, South Dakota this 2nd day of November, 2017

Mike Headley
SDSTA Executive Director



DECLARATION OF SURPLUS PROPERTY

November 30, 2017

The South Dakota Science and Technology Authority (SDSTA) wishes to surplus a stockpile of large timbers that were purchased several years ago and are not planned for use.

36,716 BF of 10"x10" Douglas fir timbers:

- 90 pcs 10x10-10'
- 45 pcs 10x10-26'
- 32 pcs 10x10-15'
- 16 pcs 10x10-13'10"
- 16 pcs 10x10-15'
- 32 pcs 10x10-13'10"
- 32 pcs 10x10-13'10"
- 32 pcs 10x10-13'6"

11,940 BF of Karri wood:

- 199 pcs 5x6-24'

The Karri wood timbers were purchased in 2008 and intended for use in the Ross Shaft, but the eventual design called for Douglas fir. The Douglas fir timbers are legacy timbers purchased by Homestake. They have no value to SDSTA in their current dimensions. SDSTA intends to exchange these timbers for credit on the purchase of replacement guides needed for Ross Shaft rehabilitation.

The wood guide supplier is working with prospective buyers to get the best value from these materials. The estimated surplus value is \$15,790.

I hereby declare the Douglas fir and Karri wood timbers to be Surplus Property. Dated at Lead, South Dakota this 30th day of November, 2017.

A handwritten signature in blue ink, appearing to read "Mike Headley".

Mike Headley
SDSTA Executive Director

Lobbyist Registration—Mr. Tim Engel

Discussion:

Ms. Mandy Knight shall contact the State of South Dakota mid-Jan 2017 and request lobbyist badges for Mr. Mike Headley, Mr. Ron Wheeler and Mr. Tim Engel for the 2017 Legislative Session.

Recommended Action:

Motion to designate Mr. Mike Headley, Mr. Ron Wheeler and Mr. Tim Engel as lobbyists for the SDSTA.

SDSTA Policies and Procedures—Mr. Mike Headley

Attached is the updated Whistleblower Policy reviewed by legal counsel and recommended for approval.

Recommended Action:

Motion to approve updated Whistleblower Policy, as presented.

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South Dakota Science & Technology Authority
Policies and Procedures Manual

SUBJECT: Whistleblower Policy

NUMBER: 2:18

The South Dakota Science and Technology Authority (SDSTA) expects its directors, employees, and other representatives to observe high standards of business and personal ethics in the conduct of their duties and responsibilities. Employees and representatives of the SDSTA must practice honesty and integrity in fulfilling responsibilities and comply with all applicable federal and state laws and regulations.

A. REPORTING RESPONSIBILITY

It is the responsibility of all directors and employees to report Reportable Conduct in accordance with this Whistleblower Policy.

B. REPORTABLE CONDUCT

The term, "Reportable Conduct," as used in this policy, means any serious impropriety that may impact the integrity or effective operations of the SDSTA, including, but not limited to, any one or more of the following:

- A serious violation of SDSTA policy;
- An unresolved Financial Conflict of Interest (see Policy 3:27)
- A violation of applicable state or federal law; or
- The use of SDSTA property, resources, or authority for personal gain or other unauthorized non organization-related purpose.

~~The term "Reportable Conduct" also means conduct, facts or circumstances which gives rise or may give rise to an actual or potential conflict of interest under the Conflict of Interest Mitigation Plan agreed to by SDSTA and Fermi Research Alliance, LLC, and approved by the SDSTA board of directors on September 17, 2015 (the "Plan"). The Plan is available [here](#).~~

C. NO RETALIATION

No officer or employee who in good faith reports Reportable Conduct will suffer harassment, retaliation or adverse employment consequence. Any officer or employee who retaliates against anyone who has reported Reportable Conduct in good faith is subject to discipline up to and including termination of employment. This Whistleblower Policy is intended to encourage and enable employees and others to raise serious concerns within the SDSTA prior to seeking resolution outside the SDSTA.

D. REPORTING CONDUCT UNDER THIS POLICY

The SDSTA encourages its officers and employees to share their questions, concerns, suggestions or complaints with someone who can address them properly. Any officer or employee may report Reportable Conduct to the Executive

SOURCE: December ~~10, 2015~~[14, 2017](#) (This revision date supersedes all previous versions).
2:18 Whistleblower Policy

Director or the Chairman of the Board of Directors. If the Reportable Conduct implicates one or both of the Executive Director or the Chairman of the Board of Directors, or if the reporting individual is not comfortable speaking with or not satisfied with response of the foregoing individuals, the issue may be reported to any member of the Board of Directors or to the SDSTA's general counsel.

The Executive Director, the SDSTA's general counsel and any member of the Board of Directors to whom a report of Reportable Conduct is made are required to immediately advise the full Board of Directors of such report.

E. ACTING IN GOOD FAITH

Anyone filing a complaint of Reportable Conduct must be acting in good faith and have reasonable grounds for believing the information disclosed indicates Reportable Conduct. Any allegations that prove not to be substantiated and which prove to have been made maliciously or knowingly to be false will be viewed as a serious disciplinary offense.

F. CONFIDENTIALITY

Reports of Reportable Conduct or suspected Reportable Conduct may be submitted on a confidential basis by the complainant or may be submitted anonymously. Reports of Reportable Conduct or suspected Reportable Conduct will be kept confidential to the extent possible, consistent with the need to conduct an adequate investigation.

G. HANDLING OF REPORTED REPORTABLE CONDUCT

A representative of the Board of Directors will notify the sender and acknowledge receipt of the report of Reportable Conduct or suspected Reportable Conduct within five business days, unless such report was submitted anonymously. All reports will be promptly investigated and appropriate corrective action will be taken if warranted by the investigation.

H. OSHA ACT OF 1970

The Occupational Safety and Health Act of 1970 gives employees the right to file complaints about workplace safety and health hazards. Further, the Act gives complainants the right to request that their names not be revealed to their employers. In addition, employees who believe that their employer has discriminated or retaliated against them for raising or reporting safety or health concerns may file a complaint. Details on filing a complaint with OSHA can be found at <http://www.osha.gov/as/opa/worker/complain.html> or if there is an emergency or the hazard is immediately life-threatening, call your local OSHA Regional Office or 1-800-321-OSHA.

Executive Session—Chairperson Casey Peterson

Meeting closed to public during executive session. See recommended motion below.

Recommended Action:

Motion to enter executive session to discuss personnel matters and to consult with legal counsel concerning contractual and legal matters.

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Report from Executive Session—Chairperson Casey Peterson

See recommended motion below...

Recommended Action:

“The board consulted with legal counsel concerning contractual and legal matters. No action was taken.”

OR

...as discussed and stated otherwise

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Confirm 2018 Board Schedule—Chairperson Casey Peterson

The next board meeting will be held on March 22, beginning at 8:00 AM (Mountain Time).

2018 Regular Board Schedule	
Thu, March 22, 2018	08:00 am (MT)
Thu, June 21, 2018	08:00 am (MT)
Tue, September 18, 2018	08:00 am (MT)
Thu, December 20, 2018	09:00 am (MT), lunch provided

*South Dakota Science and Technology Authority
Sanford Underground Research Facility
Education & Outreach Building (large conference room)
630 E. Summit Street, Lead SD 57754
Questions? Contact Mandy Knight, mknight@sanfordlab.org
Direct Line: 605.722.4022, Cell: 605.641.0475*

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Board Comments—Chairperson Casey Peterson

1. Dr. Ani Aprahamian
2. Mr. Paul Christen
3. Mr. Dana Dykhouse, Vice-Chairperson
4. Ms. Pat Lebrun, Secretary-Treasurer
5. Mr. Casey Peterson, Chairperson
6. Dr. Jan Puszynski (ex-officio member)
7. Mr. Ron Wheeler, Vice-Chairperson
8. Dr. Robert Wilson

Recommended Action:

None.

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