

South Dakota Science and Technology Authority

**Board Meeting
March 17, 2016**



630 East Summit Street
Lead, SD 57754

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Call to Order – Chairperson Casey Peterson

1A. Call Roll

Dr. Ani Aprahamian

Mr. Paul Christen

Mr. Dana Dykhouse

Ms. Pat Lebrun

Mr. Casey Peterson

Mr. Ron Wheeler

Dr. Robert Wilson

Dr. Heather Wilson

1B. Introduce Guests

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**South Dakota Science and Technology Authority
March 17, 2016 Board Meeting**

Agenda Item: 02

Approve Agenda – Chairperson Casey Peterson

Attached is the SDSTA Board agenda for the March 17, 2016 meeting.

Recommended Action:

Motion to approve agenda as presented.

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AGENDA
South Dakota Science and Technology Authority
630 East Summit Street, Lead, South Dakota
Meeting of the Board of Directors
Thursday, March 17, 2016 at 9:00 AM (MT)

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. Approve Minutes	-- Chair Casey Peterson	<i>Motion to approve December 10 and December 22 minutes</i>
4. Audit Committee Report A. Discuss Audit Report for FY Ended June 30, 2015 B. Discuss benchmark of SDSTA Internal Controls	-- Ms. Pat Lebrun	<i>Audit Report to be included on the June 16, 2016 agenda for approval</i> <i>Informational</i>
5. Financial Report A. Financial Statements	-- Mr. Mike Headley -- Ms. Nancy Geary	<i>Informational</i>
6. Report from Executive Director A. SDSTA February Monthly Report B. Declarations of Surplus 1. 125HP Roots Blowers 2. Yates Crusher Equipment C. Discuss Intergovernmental Agreement between SD Office of Risk Management and SDSTA D. Discuss MOU Amendment for the Visitor Center and Instrument of Conveyance	-- Mr. Mike Headley -- Mr. Mike Headley -- Mr. Mike Headley -- Mr. Mike Headley -- Mr. Mike Headley	<i>Informational</i> <i>Informational</i> <i>Motion to re-authorize the executive director to sign the amended Intergovernmental Agreement between the South Dakota Office of Risk Management and SDSTA</i> <i>Motion to authorize the executive director to sign the First Amendment to the Memorandum of Understanding between the Homestake Visitor Center and SDSTA concerning the Creation and Operation of the Visitor Center and the chairperson to sign the Instrument of Conveyance</i>
E. Operations Update F. Science Update	-- Mr. Walter Weinig -- Dr. Jaret Heise	<i>Informational</i> <i>Informational</i> <i>Motion to accept executive director's report</i>
7. Contracts A. Yates Admin Building Parking Lot Repair B. Administration Building and Foundry Roof Replacement	-- Mr. Mike Headley -- Mr. Mike Headley -- Mr. Mike Headley	<i>Motion to authorize executive director to sign final contract to repair the Yates Administrative Building parking lot</i> <i>Motion to authorize executive director to sign final contract to replace Administrative Building and Foundry roofs</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 24 hours prior to this meeting. Telephone: (605) 722-8650.

AGENDA
South Dakota Science and Technology Authority
630 East Summit Street, Lead, South Dakota
Meeting of the Board of Directors
Thursday, March 17, 2016 at 9:00 AM (MT)

Title	Report	Recommendations
B. Administration Building and Foundry Roof Replacement	-- Mr. Mike Headley	<i>Motion to authorize executive director to sign final contract to replace Administrative Building and Foundry roofs</i>
C. Yates Hoist Motor Generator Refurbishment	-- Mr. Mike Headley	<i>Motion to authorize executive director to sign final contract to refurbish Yates hoist motor generator</i>
D. LZ Surface Radon Control System	-- Mr. Mike Headley	<i>Motion to authorize executive director to sign final contract for the LZ Surface Radon Control System</i>
E. Discuss Loan Agreement for additional Xenon Purchase	-- Vice-Chairperson Ron Wheeler	<i>Informational</i>
8. Executive Session	-- Chair Casey Peterson	<i>Motion to enter executive session to discuss personnel matters and to consult with legal counsel concerning contractual matters</i>
9. Report from Executive Session	-- Chair Casey Peterson	<i>Motion to accept executive session report</i>
10. Review of SDSTA Policies	-- Mr. Mike Headley	<i>Motion to approve new and updated policies</i>
11. 2016 Legislative Update	-- Mr. Tim Engel	<i>Informational</i>
12. SDSTA Employees Leaving to work for SDSTA Vendors	-- Mr. Tim Engel	<i>Informational</i>
13. Select Nominating Committee	-- Chair Casey Peterson	<i>Election of officers to be held at the June meeting</i>
14. Confirm date and time of next meeting	-- Chair Casey Peterson	<i>Thursday, June 16, 2016 at 9:00am (MT)</i>
15. Board Comments		
16. Adjourn	-- Chair Casey Peterson	<i>Motion to adjourn</i>

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 9, 2015	December 9, 2021
2.	Mr. Paul Christen	January 31, 2011	August 8, 2016
3.	Mr. Dana Dykhouse, Vice-chair	Re-appointed August 1, 2014	August 14, 2020
4.	Ms. Patricia Lebrun, Secretary-Treasurer	Re-appointed August 16, 2010	August 8, 2016
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. Heather Wilson, ex-officio member	SDSM&T President appointed July 1, 2014	
Committees and Members (2015)			
	Audit Committee Members:	Nominating Committee Members:	
	➤ Pat Lebrun-Chair	➤ Ani Aprahamian	
	➤ Paul Christen	➤ Dana Dykhouse	

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Approve Minutes – Chairperson Casey Peterson

Attached are the SDSTA Board Minutes for the following meetings:

- December 10, 2015
- December 22, 2015 (telephonic)

Recommended Action:

Motion to approve the Minutes of the December 10 and December 22, 2015 meetings as presented.

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South Dakota Science and Technology Authority Board of Directors
Meeting Minutes
Thursday, December 10, 2015
Lead, South Dakota

The Board of Directors of the South Dakota Science and Technology Authority (SDSTA) convened at 9:38 AM Mountain Time (MT) on Thursday, December 10, 2015 in the 2nd Floor Vault 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 (via teleconference)
Secretary/Treasurer Patricia Lebrun
Chairperson Casey Peterson
Vice Chairperson Ron Wheeler
Dr. Robert Wilson (via teleconference)

MEMBERS OF THE BOARD NOT IN ATTENDANCE

Dr. Ani Aprahamian
Vice Chairperson Dana Dykhouse
Dr. Heather Wilson

SDSTA STAFF

Ms. Michelle Andresen, Administrative Assistant
Ms. Billi Bierle, Sanford Lab Homestake Visitor Center Director
Mr. Tim Engel, Legal Counsel
Ms. Nancy Geary, Chief Financial Officer
Mr. Mike Headley, Executive Director
Dr. Jaret Heise, Science Director
Ms. Sharon Hemmingson, Business Services and Contracts Manager
Ms. Mandy Knight, Administrative Services Manager
Mr. KC Russell, Cultural Diversity Coordinator
Mr. Noel A. Schroeder, Environment, Safety and Health (ESH) Director
Ms. Constance Walter, Communications Director
Mr. Walter Weinig, Laboratory Director

ALSO PRESENT DURING ALL OR PART OF THE MEETING

Dr. June Apaza, Education and Outreach Director (BHSU)
Mr. Adam Hurlburt, Black Hills Pioneer
Dr. Ben Sayler, Co-Director, Sanford Science Education Center (BHSU)

ITEM 1. – CALL TO ORDER

Chairperson Peterson called the meeting to order at 9:38 AM (MT). Roll call was held. All members were present in person or by telephone except Dr. Ani Aprahamian, Vice Chairperson Dana Dykhouse and Dr. Heather Wilson.

ITEM 2. – APPROVE AGENDA

Chairperson Peterson asked for a motion to approve the agenda.

Motion by Ms. Lebrun and second by Mr. Wheeler to approve the agenda. Motion passed unanimously.

ITEM 3. – APPROVE MINUTES

Chairperson Peterson asked for comments, changes or corrections to the Minutes of the September 17 and October 9, 2015 meetings. Hearing none, a motion to approve was requested.

Motion by Mr. Wheeler and second by Mr. Christen to approve the Minutes of the September 17 and October 9, 2015 meetings as presented. Motion passed by unanimous roll call vote.

ITEM 4. – AUDIT COMMITTEE REPORT

Audit Committee Chairperson Ms. Patricia Lebrun reported the Audit Report for Fiscal Year Ended June 30, 2015 had not been finalized at the time of the board meeting and requested it be included on the March 17, 2016 meeting agenda for discussion. The report would then be included on the June 16, 2016 agenda for approval. Ms. Lebrun congratulated and thanked Chief Financial Officer Ms. Nancy Geary and her staff for yet another audit with no deficiencies noted. Chairperson Peterson acknowledged the audit committee report as informational and said no motion is necessary.

ITEM 5. – FINANCIAL REPORT

Executive Director Mr. Mike Headley and Ms. Geary provided highlights as the November financial report had not been finalized at the time of the board meeting. Ms. Geary said a few items were capitalized such as new servers to replace aging servers and new teleconferencing equipment was purchased for conference rooms. Mr. Headley said the overall cash flow was good in spite of the federal Continuing Resolution and work continues to move forward. Ms. Geary said additional funding was received to take the budget through January in incremental funding. Dr. Robert Wilson asked about the status of discussions with Fermilab and Berkeley on the transition. Mr. Wheeler said both parties are happy to see this facilitated. Chairperson Peterson acknowledged the financial update as informational and said no motion is necessary.

ITEM 6. – REPORT FROM THE EXECUTIVE DIRECTOR

Mr. Headley discussed the Declarations of Surplus Property: 1) The Autotrol Pilot Rotating Biological Cylinder at the Waste Water Treatment Plant and 2) The Dust Collector at the Yates Crusher room. SDSTA has no further use for these items. Dr. Robert Wilson inquired if there is a protocol on how to receive surplus. Mr. Headley said Policy 3.30 defines surplus and items are bid for a competitive process as well as posted on the Sanford Lab website and other public locations.

Mr. Headley then introduced new Sanford Lab Director Mr. Walter Weinig, who started his position in October. Mr. Weinig said he is once again glad to be associated with SDSTA as he was involved with the project in previous years.

Mr. Headley then began his slide presentation with a safety culture milestone noting 13-months with no recordable injuries; however, November had four recordable injuries. Two are Standard Threshold Shifts; specifically, two are hearing degradation and two are musculoskeletal injuries (one was a trip and fall and the other a muscle strain). A mandatory All Hands Safety meeting was conducted on November 30 to discuss strategies to stay focused (emphasizing this timeframe of the year, i.e. the Holidays and associated stresses/distractions).

Mr. Headley provided a status update on the MAJORANA (MJD) and LUX experiments and said both are in physics data-collecting mode. The Ross Shaft Rehabilitation status is 65 percent complete and on schedule for completion in mid-2017.

The SDSTA Business Services and Finance Offices have been working with Lawrence Berkeley National Lab to get a contract in place to obtain Department of Energy (DOE) funding for the Ross Shaft rehabilitation project. Mr. Headley said it had not been finalized in time for the board meeting, and requested a telephonic meeting on December 22 to approve the contract.

The Critical Decision (CD)-3a Director's Review October 27-29 and DOE Independent Project Review December 2-4 for the Long-Baseline Neutrino Experiment and Deep Underground Neutrino Experiment (LBNF/DUNE) were held at Sanford Lab. Mr. Headley stated that the DOE Review was a huge milestone in the process and the Reviews went very well.

The Strategic Plan for the Sanford Underground Research Facility has been distributed to the board, South Dakota Legislature, DOE partners and other stake holders. A total of 286 copies were mailed in the last few days. The report can also be found on the Sanford Lab website.

Mr. Headley then presented slides with the design scope of the 4850L excavations of the LBNF/DUNE experiment detector caverns.

Ms. Lebrun asked if a construction manager for the LBNF/DUNE project will be an SDSTA employee or contracted by Fermilab. Mr. Headley replied the position will be contracted by Fermilab. The DOE will have jurisdiction over the collaboration, but all other areas will be under SDSTA jurisdiction. The lease that will be discussed at this board meeting is the controlling document and a Memorandum of Understanding (MOU) will be outlined to clarify the underground spaces.

He said a workshop was conducted at Sanford Lab in August 2015, and a comprehensive logistics plan report was finalized by ARUP for all underground campuses. The report outlines the next 15 years for all underground operations and identifies comprehensive plans and project risks. Mr. Headley stated if any board member is interested in receiving a copy to let him know.

Mr. Headley discussed a slide representing the onsite headcount numbers of those that would work underground and on the surface during construction of the LBNF/DUNE experiment. Dr. Robert Wilson asked about logistics such as housing accommodations for all future parties arriving in Lead. Mr. Headley said he is a Deadwood Economic Development Committee member and is discussing housing expectations in the area as well as surface warehouse space.

Mr. Headley turned over the discussion to Mr. Weinig who described the Blast Vibration Study that is scheduled to occur this week and next week. He said computer models were created to estimate the resulting vibration over distance to the Ross and Davis Campuses. The calculations are routine except for the sensitivity of the science experiments is unknown. Mr. Weinig said the tests are designed to either confirm the model or identify where perimeters need to be changed within the models to control the excavation. There will be a total of three vibration test blasts conducted in a two-week period. Chairperson Peterson asked how the test blast compares to a full scale blast. Mr. Weinig said it is comparable to a smaller drift blast and the information should be scalable. Chairperson Peterson asked when a previous underground excavation this large was conducted, in general. Mr. Weinig said the blasts are similar to underground powerhouses for electric dams or subways, but the blasts will be deeper at the Sanford Lab. He concluded that the contractors involved are familiar with this type of excavation.

Mr. Headley introduced BHSU Education and Outreach (E&O) Director Dr. June Apaza who provided an update on the Curriculum Development. She said the E&O Department determined how to roll-out their new curriculum and decided on necessary staff for the educational programs. They are utilizing a contracting model with three educators on a part-time basis for periodic day events until they determine future staffing needs. The department is currently determining the availability to contact schools statewide with the curriculum. Ms. Lebrun asked if they could contact a specific area to promote that certain area for a specific time. Dr. Apaza stated they contact certain schools when staff will be in the area and notify them of their presence. Mr. Wheeler asked about a program to train presenters in different locations across South Dakota. Dr. Apaza said it would be ideal to fiscally support and connect with local trainers. Ms. Lebrun asked what the selection process is for teachers who pilot the curriculum units. Dr. Apaza replied teachers who assist with creating the curriculum are first offered an opportunity

and then to those who previously worked with them in the past. Dr. Apaza closed by reporting that the South Dakota Department of Education will be announcing the Davis Bahcall internship applications at 5pm today.

Mr. Headley introduced SDSTA Science Director Dr. Jaret Heise, who provided Science Integration highlights. He reviewed the following: LUX Data Taking, Operations and Maintenance, and Safety and Decommissioning in 2016. Dr. Robert Wilson asked if the transition to LZ will require additional personnel. Dr. Heise said the number of personnel will be very similar, with perhaps a slight increase. He then provided MJD highlights of Electroforming and Module Development. The MJD experiment will begin producing physics data in 2016.

Dr. Heise provided an overview of the new Ross Campus laboratories commissioned for the Compact Accelerator System for Performing Astrophysical Research (CASPAR) and Black Hills State University Underground Campus (BHUC). He said CASPAR is currently installing equipment and BHUC received authorization in September for initial occupancy and equipment installation. Dr. Heise then reviewed the Low-Background Counters (LBC) recent and upcoming accomplishments as well as current and near-term research efforts of ten other experiments onsite.

ITEM 7. – EXECUTIVE SESSION

Motion by Mr. Lebrun and second by Mr. Wheeler to enter into executive session to discuss personnel matters and to consult with legal counsel concerning contractual matters. By roll call vote, the motion passed unanimously.

The board recessed at 11:11 AM for Executive Session and reconvened at 12:29 PM.

ITEM 8. – REPORT FROM EXECUTIVE SESSION

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

Motion by Mr. Wheeler and second by Ms. Lebrun to approve the executive session report. By roll call vote, the motion passed unanimously.

ITEM 6E. – LBNF/DUNE LEASE AGREEMENT

Mr. Engel discussed the LBNF/DUNE Lease Agreement, which will cover specific, limited surface and underground properties. He said access to the underground will be handled in a different agreement. The agreement spells out the following: the SDSTA is the Lessor and the DOE is the Lessee; the initial term is twenty years, ending in 2035 and renewable from year to year thereafter; and the rent payable by the government is \$1 for the first 20 years and \$1 for each year thereafter. He said the DOE construction contractor will comply with SDSTA insurance requirements which are Exhibits A & B in the board packet. Exhibit D is a standard Acknowledgement of Risk and Release, Agreement Not to Sue and Waiver required to be signed by those going underground. He said the SDSTA is responsible for maintenance and repair of common areas. There is a requirement for the SDSTA to indemnify the DOE if any claims arise of pre-existing environmental conditions. Management will work with the insurance consultants and legal counsel to mitigate financial risk to the SDSTA resulting from the obligation to indemnify. The SDSTA is responsible for disposal of waste rock from the underground. He concluded the DOE is required to provide a Decommissioning Plan. Mr. Engel asked if there were any questions. There were none.

Motion by Mr. Wheeler and second by Mr. Christen to approve the lease as presented; to authorize the chairperson, in consultation with the laboratory director and legal counsel, to negotiate the final terms of the insurance requirements; and to authorize the chairperson to sign. By roll call vote, the motion passed unanimously.

Motion by Mr. Wheeler and second by Ms. Lebrun to accept the Executive Director's report. Motion passed unanimously.

ITEM 9. – REVIEW OF SDSTA POLICIES

Mr. Headley briefly discussed the following updated, revised and retired policy recommendations; all had been reviewed by Mr. Engel.

The following policies were recommended for approval:

- Manual Contents Page (*updated*)
- Policy 2:3 Drug and Alcohol Testing Policy (*“and” spelled out in title, reworded for clarity*)
- Policy 2:13 Open Door Policy (*reworded for clarity*)
- Policy 2:18 Whistleblower (*reformatted and revised language to reflect current changes-additions Conflict of Interest Mitigation Plan*)
- Policy 2:19 Americans with Disabilities Act (ADA) (*formatting changes only*)
- Policy 3:8 Salary and Hourly Payroll Policy (*reference to Employment Policy 4:5 added for clarification*)
- Policy 3:26 Management and Control of Certain Funds (*reformatted, revised Indemnification Fund language*)
- Policy 3:27 Financial Conflict of Interest Policy (*“Financial” added to title; reference corrected in first paragraph*)
- Policy 3:30 Surplus Property Disposal Policy (*added “Policy” to title and updated wording*)
- Policy 6:1 Underground Personnel Access Control Policy (*“SDSTA” updated, reformatted and minor changes to wording*)

The following policies were recommended for retirement:

- Policy 2.8 Permit Certification Logs (*procedural, should not be a policy*)

The following procedures were presented for informational purposes only.

- Procedure 2:13A Open Door Procedure (*formatting changes only*)
- Procedure 2:3A Drug and Alcohol Testing Policy (*“and” spelled out in title, reworded for clarity*)

Mr. Headley thanked Administrative Services Manager Mandy Knight and Contracts Specialist Lea Mathis for their work on the policies. He then asked if there were any questions or comments. Dr. Robert Wilson asked why policies were retired. Mr. Headley stated the retired policies were either outdated, irrelevant or were rolled into procedures. Dr. Robert Wilson asked about the Underground Personnel Access Control Policy and if a violation occurred, is there a right of appeal. Mr. Headley said that facts would be gathered and a review conducted before denying underground access. It would be decided on a case by case basis. Dr. Robert Wilson said strong consequences are fine but asked if it is too restrictive. Mr. Engel advised to take this under advisement and to handle case by case. Chairperson Peterson asked if there were any questions. There were none.

Motion by Ms. Lebrun and second by Dr. Robert Wilson to approve the new, updated and retired policies as presented. By roll call vote, the motion passed unanimously.

ITEM 10. – LOBBYIST REGISTRATION

Mr. Engel advised the board there are no SDSTA legislative initiatives this year. He recommended the board designate and register lobbyists for the 2016 Legislative Session.

Motion by Mr. Christen and second by Ms. Lebrun to designate Mr. Mike Headley, Mr. Ron Wheeler, Mr. Walter Weinig and Mr. Tim Engel as lobbyists for the SDSTA. By roll call vote, the motion passed unanimously.

ITEM 11. – CONFIRM DATE AND TIME OF NEXT MEETING

Chairperson Peterson said there will be a telephonic board meeting on December 22 at 9:30 AM (MT). Ms. Knight shall poll members of the board not present on the proposed date and time.

Chairperson Peterson asked if there were any concerns with the board meeting scheduled for Thursday, March 17, 2016 at 9:00 A.M. (MT). There were none.

Chairperson Peterson informed the board that Dr. Ani Aprahamian was reappointed to the Board for another six-year term.

ITEM 12 – BOARD COMMENTS

Ms. Lebrun said she appreciates the updates during the meetings from different SDSTA Departments. The Audit Committee is discussing having an audit of the internal controls of the SDSTA as it would be appropriate to get a bench mark (of internal controls). She requested this be included on the agenda for the next meeting. Ms. Lebrun welcomed Mr. Weinig to the SDSTA and wished Happy Holidays to all.

Mr. Wheeler reiterated his thanks to Mr. Headley and staff for a great job during the CD-3a Reviews. He said it is fun to see SDSTA moving forward. He wished everyone a Merry Christmas.

Mr. Christen said this was a very informative meeting. He congratulated Mr. Headley on the impressive CD-3a Reviews. Mr. Christen also congratulated Ms. Geary and her team on a clean audit. He wished Happy Holidays to everybody.

Dr. Wilson said he attended the CD-3a Review in December and stated the attendees were uniformly impressed with the performance of the SDSTA. He congratulated Mr. Headley and SDSTA staff. Dr. Wilson also commented that the international participants were impressed with their underground tour and said it was a positive experience. He wished Happy Holidays to everyone.

Mr. Weinig thanked the board for the warm welcome. He said it was nice to be back at the Sanford Lab as he was involved with earlier phases of the project; it is nice to be here once again.

Mr. Headley thanked Ms. Knight for organizing the board meeting. He stated it has been an incredible year and amazing to see the project move forward. The Sanford Lab Homestake Visitor Center has been up and running since this summer and is doing very well. Mr. Headley is proud of the SDSTA team as well as the partnership with the board. He wished everyone a safe and Happy Holidays.

Mr. Engel appreciated the opportunity to be part of the SDSTA board and said this is one of the biggest milestones in his career.

Chairperson Peterson asked if anyone in the room had any final comments. Ms. Constance Walter invited everyone to attend the Nobel Day event at the Visitor Center beginning at 5:00 PM (MT) today.

Chairperson Peterson thanked the entire SDSTA team. He said looking back, it is phenomenal what has happened, how the process has accelerated and the people handling it. He said he is proud to be associated with SDSTA and congratulated the SDSTA on the CD-3a Reviews. He is interested in seeing how the strategic plan aligns in 2016. He wished everyone a Merry Christmas.

ITEM 13. – ADJOURN

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

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

Meeting adjourned at 12:56 PM.

South Dakota Science and Technology Authority Board of Directors
Telephonic Meeting Minutes
Tuesday, December 22, 2015
Lead, South Dakota

The Board of Directors of the South Dakota Science and Technology Authority convened at 9:31 AM Mountain Time (MT) on Tuesday, December 22, 2015, via teleconference. Listening posts for the public were established at the office of the SDSTA at 630 E. Summit Street, Lead, South Dakota, and at the conference room of the South Dakota Department of Tourism and State Development, 711 East Wells Avenue, Pierre, South Dakota.

MEMBERS OF THE BOARD IN ATTENDANCE BY TELEPHONE

Dr. Ani Aprahamian
Mr. Paul Christen
Mr. Dana Dykhouse, Vice-Chairperson
Ms. Patricia Lebrun, Secretary/Treasurer
Mr. Casey Peterson, Chairperson
Mr. Ron Wheeler, Vice-Chairperson
Dr. Robert Wilson

MEMBERS OF THE BOARD WHO WERE NOT IN ATTENDANCE

Dr. Heather Wilson

SDSTA STAFF IN ATTENDANCE

Ms. Nancy Geary, Chief Financial Officer
Mr. Mike Headley, Executive Director
Ms. Sharon Hemmingson, Business Services and Contracts Manager
Ms. Mandy Knight, Administrative Services Manager
Mr. Tim Engel, Legal Counsel (*by telephone*)
Mr. Walter Weinig, Laboratory Director (*by telephone*)

ALSO PRESENT DURING ALL OR PART OF THE MEETING

No other persons were present.

ITEM 1. – CALL TO ORDER

Chairman Casey Peterson called the meeting to order. All members, except Dr. Heather Wilson, were present by roll call.

Chairperson Peterson asked participants to introduce themselves.

ITEM 2. – APPROVE AGENDA

Chairman Peterson requested a motion to approve the agenda.

Motion by Mr. Christen and second by Ms. Lebrun to accept the agenda as presented. By roll call vote, the motion passed unanimously.

ITEM 3. – DISCUSS THE ROSS SHAFT REHABILITATION CONTRACT WITH LAWRENCE BERKELEY NATIONAL LABORATORY (LBNL)

Legal counsel Mr. Tim Engel said SDSTA has been working with LBNL on a contract and said the contract is basically a funding mechanism for the Ross Shaft work. The amount is a little over \$6.5M and calls for work to be done the same way it has been done up to this point.

He said SDSTA's request for a waiver of the bond requirement waiver was rejected, so the Department of Energy (DOE) and LBNL will require a payment bond. The proposed motion gives the Chairperson, Mr. Headley and Mr. Engel the authority to continue to negotiate in the time allowed. The contract also requires that the SDSTA have insurance that insures University of California Regents, the governing body of LBNL; they request the insurance to be primary and non-contributory. Mr. Engel and SDSTA staff are working on a solution to purchase additional insurance that would cover this contract and a few other contracts with Fermilab. In conclusion, Mr. Engel said he reviewed the contract, made some comments, asked LBNL for a few changes and does not have any objection to the board approving it.

Vice-Chair Ron Wheeler asked the cost of the performance bond. Business Services and Contracts Manager Ms. Sharon Hemmingson said she had been asked to include pricing as an option and the quote is \$133,000.00. This cost would be included in the SDSTA-LBNL contract so they would pay it as a reimbursable expense. Dr. Robert Wilson asked the cost of insurance. Mr. Engel replied insurance to cover this contract and a few other contracts with Fermilab is \$50,000 for a tower of \$15M coverage, which may not be needed. Vice-Chair Wheeler said he believes that would be built into the SDSTA overhead and LBNL will pay that also. Executive Director Mr. Mike Headley concurred. Secretary/Treasurer Pat Lebrun asked if this would be in addition to SDSTA's other insurance. Mr. Engel said it would be.

Motion by Mr. Wheeler and second by Dr. Aprahamian to approve the contract as presented, and to authorize the chairperson, in consultation with the executive director and legal counsel, to negotiate the final terms and execute the contract. By roll call vote, the motion passed unanimously.

Dr. Robert Wilson asked if the \$50,000 for the insurance was anticipated in the budget in the coming year and if the overhead would need to be re-negotiated. Chief Financial Officer Ms. Nancy Geary replied no and said the overhead would be figured yearly as it always is and then determined at fiscal year-end 2016. It would be included with all indirect charges. She said there should be no cash-flow issues.

ITEM 4. – DISCUSS LOAN AGREEMENT WITH SOUTH DAKOTA STATE UNIVERSITY (SDSU) FOUNDATION

Vice-Chairperson Wheeler reported that with the help of Vice-Chair Dana Dykhouse, the SDSU Foundation board has committed to a \$2M loan to purchase xenon for the LUX-ZEPLIN (LZ) experiment. He said the loan would most likely take the same form as the South Dakota Community Foundation (SDCF) loan. The only other variable could be when the SDSTA can draw out the money. He said the foundation is discussing to push out the first draw to January of 2017. Mr. Engel will be working with the SDSU Foundation attorney on the terms of the loan agreement. Mr. Wheeler said he is pleased with the SDSU Foundation and asked if there were any questions. He said he would be talking to the University of South Dakota Foundation next.

Dr. Robert Wilson referred to the SDSU Foundation letter dated December 16, 2015 and noted Mr. Wheeler's title is listed incorrectly as Executive Director. Mr. Wheeler said it is not germane to the loan and that the loan will be the legal document.

Motion by Ms. Lebrun and second by Mr. Christen to approve the loan from SDSU Foundation for the purchase of xenon, to authorize the Chairperson, in consultation with Vice-Chairperson Ron Wheeler and SDSTA legal counsel, to negotiate the final terms of the loan agreement, and to authorize the Chairperson to execute the loan agreement. By roll call vote, the motion passed unanimously.

ITEM 5. – DISCUSS XENON PURCHASE

Vice-Chair Wheeler stated that the first 500,000 liters of xenon that was purchased averaged \$6.21 per liter. He said Ms. Hemmingson and Sanford Underground Research Facility Deputy Head Dr.

Murdock Gilchriese are in the process of requesting bids for the next 500,000 liters of xenon from suppliers, and would like the authorization to place the xenon order, if the prices are favorable. Vice-Chairperson Wheeler said there could be more buyers in the market next year with the new experiments. He said the payment is not due until delivery and should not create a cash flow issue. Dr. Robert Wilson asked if there is a cost associated with storage. Vice-Chairperson Wheeler replied not to his knowledge, and said that all xenon purchases are shipped to Stanford Linear Accelerator (SLAC) in California. Mr. Paul Christen asked how many liters of xenon in total will be purchased. Vice-Chairperson Wheeler replied 1.5 million liters.

Motion by Mr. Christen and second by Mr. Dykhouse to approve the purchase of xenon contingent upon a final signed agreement between SDSTA and the SDSU Foundation. By roll call vote, the motion passed unanimously.

ITEM 6. – BOARD COMMENTS

Mr. Dykhouse thanked Mr. Wheeler for his efforts to convince the SDSU Foundation to make the loan for xenon.

Mr. Wheeler thanked Mr. Dykhouse and said he hoped prices are good for xenon. He wished everyone a Happy Holiday.

Mr. Christen wished everyone a Happy Holiday.

Ms. Lebrun seconded all the comments already made.

Dr. Aprahamian congratulated SDSTA for being forward thinking and wished everyone a Happy Holiday.

Chairperson Peterson said the momentum is very fast and he is pleased that everyone is staying ahead. He wished everyone a Merry Christmas, Happy New Year and Happy Holidays.

Chairperson Peterson reminded members the next board meeting will be held on St. Patrick's Day on Thursday, March 17 at 9:00 AM (MT).

ITEM 7. – ADJOURN

Chairperson Peterson asked for a motion to adjourn.

Motion by Mr. Wheeler and second by Dr. Aprahamian to adjourn. By roll call vote, the motion passed unanimously.

The meeting adjourned at 9:54 AM (MT) on December 22, 2015.

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Audit Committee Chairperson Ms. Pat Lebrun

Audit Committee Members:

- Ms. Pat Lebrun, Audit Committee Chair
- Mr. Paul Christen

4A. Discuss Audit Report for Fiscal Year Ended June 30, 2015, attached.

4B. Discuss benchmark of SDSTA Internal Controls; committee minutes attached.

Recommended Action:

Request audit report to be included on the June 16, 2016 agenda for approval.

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SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

AUDIT REPORT

Fiscal Year Ended June 30, 2015



**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, 2015

Board of Directors:

Casey Peterson, Chairman
Dana Dykhouse, Vice-Chairman
Ron Wheeler, Vice-Chairman
Pat Lebrun, Secretary/Treasurer
Thomas C. Adam, Member
Dr. Ani Aprahamian, Member
Paul Christen, Member
Dr. Heather Wilson, Ex-Officio Member

Executive Director:

Michael Headley

Chief Financial Officer:

Nancy Geary

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY
TABLE OF CONTENTS

	<u>Page</u>
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 <i>Government Auditing Standards</i>	1
Independent Auditor's Report on Compliance for Each Major Federal Program and Report on Internal Control Over Compliance Required by OMB Circular A-133	3
Schedule of Prior Audit Findings	5
Schedule of Current Audit Findings and Questioned Costs	5
Independent Auditor's Report.....	6
Management's Discussion and Analysis (MD&A)	9
Basic Financial Statements:	
As of June 30, 2015:	
Statement of Net Position.....	17
For the fiscal year ended June 30, 2015:	
Statement of Revenues, Expenses and Changes in Net Position	18
Statement of Cash Flows	19
Notes to the Financial Statements	21
Required Supplementary Information Other than MD&A:	
Schedule of Proportionate Share of the Net Pension Liability (Asset).....	33
Schedule of Employer Contributions	34
Supplementary Information:	
Schedule of Operating Expenses.....	35
Schedule of Expenditures of Federal Awards	36



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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 then ended June 30, 2015, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements and have issued our report thereon dated December 8, 2015.

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.

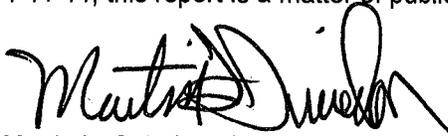
Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not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

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

December 8, 2015



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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 OMB CIRCULAR A-133

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) Circular A-133 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, 2015. 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 the requirements of laws, 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 OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*. Those standards and OMB Circular A-133 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 South Dakota Science and Technology 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, 2015.

Report on Internal Control Over Compliance

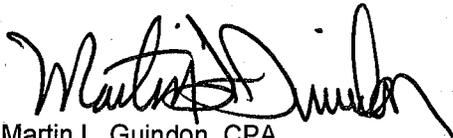
Management of the Authority is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Authority's internal control over compliance with the 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 OMB Circular A-133, 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 OMB Circular A-133. Accordingly, this report is not suitable for any other purposes. As required by South Dakota Codified Law 4-11-11, this report and our report on compliance for each major federal program are matters of public record and their distribution is not limited.



Martin L. Guindon, CPA
Auditor General

December 8, 2015

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 audit findings.

Prior (Other) Audit Findings:

The prior audit report contained no written 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 of each opinion unit.
- 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 need to be disclosed in accordance with the Office of Management and Budget Circular A-133, Section .510(a).
- f. The federal awards tested as major programs were:
 - 1. SURF (Sanford Underground Research Facility) Operations Support 81.6994297
- g. 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 2015.
- h. 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.



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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 then ended June 30, 2015, 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

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 opinions.

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, 2015, and the changes in financial position and cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Implementation of New Accounting Standards

As described in Note 5 to the financial statements, the Authority implemented the provisions of GASB Statement No. 68, Accounting and Financial Reporting for Pensions – An Amendment of GASB Statement No. 27 and GASB Statement No. 71, Pension Transition for Contributions Made Subsequent to the Measurement Date – An Amendment of GASB Statement No. 68. As discussed in Note 5 to the financial statements, the implementation of these standards resulted in a restatement of beginning net position. Our opinion is not modified with respect to this matter.

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 9 through 16, 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 and Other Information

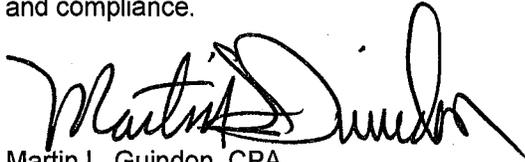
Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Authority's basic financial statements. The Schedule of Operating Expenses and the Schedule of Expenditures of Federal Awards, which is required by the U.S. Office of Management and Budget Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations* 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 Schedule of Operating Expenses and the Schedule of Expenditures of Federal Awards are 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 Schedule of Operating Expenses and the Schedule of Expenditures of Federal Awards are fairly stated in all material respects in relation to the basic financial statements as a whole.

The listing of the Authority Officials has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated December 8, 2015 on our consideration of the Authority's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements, and other matters. The purpose of that report is 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 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

December 8, 2015

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS JUNE 30, 2015

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, 2015 (FY 2015). 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 purpose of converting its acquired Homestake Mine property into an underground science and engineering laboratory. The property was donated to the Authority by Barrick Gold 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, 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, 2015

FINANCIAL HIGHLIGHTS:

- Total assets at year-end decreased to \$119,646,133.
- Current and Other Assets decreased by \$6,509,433, primarily due to the expenditure of funds from the Sanford Gift accounts being held by the State Treasurer on behalf of the Authority.
- Capital Assets increased by \$14,221,450. Page 13 details the major capital asset additions. Furthermore, page 24 summarizes the changes in capital assets by major categories. Notable increases primarily affected the Improvements in Progress designation including the Ross Shaft rehabilitation project as well as other projects for education and science. Also included in this classification is the capital lease through AmWest, Inc. – Hydro Resources that was renegotiated in January 2013 from an operating lease.
- Net Pension Asset is a new classification included in our Statement of Net Position. The Governmental Accounting Standards Board (GASB) recently approved new statements that require governmental entities to disclose pension information concerning our retirement plan in the South Dakota Retirement System (SDRS). (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, 2014 pension measurement date for our fiscal year end June 30, 2015 statements. Requirements include reporting our proportionate share of the collective net pension asset as of the beginning of the initial period of implementation – June 30, 2014. Our proportionate share equals \$3,809,785.
- Deferred Outflows of Resources is also related to the new (GASB) statements concerning pensions. 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, 2014. The total Deferred Outflows of Resources equals \$3,366,693.
- Total liabilities at year end increased to \$4,748,902, primarily due to an increase in accounts payable. Outstanding invoices included amounts owed to engineering and construction firms for the Sanford Lab Visitor Center being built at the site previously occupied by the Homestake Visitor Center. Increases were also noted for an engineering firm charged with the ongoing Long Baseline Neutrino Facility (LBNF) project. Additional amounts were owed for construction expenses related to the Jonas Science Building renovations and the CASPAR/BHSU underground facility development. Yet, Long-Term Liabilities decreased for the capital lease liability on the deep pump system.
- Deferred Inflows of Resources relates to the new (GASB) requirements for pension reporting. The amount recorded relates to our portion of the difference between projected and actual investment earnings. Our portion equals \$4,412,373.
- Total restricted net position decreased to \$22,369,484, due to the expenditure of funds received from Mr. Sanford that is held by the State Treasurer on behalf of the Authority. Funds were expended on projects authorized by the Fourth Amendment to the Homestake Gift Agreement including the new Sanford Lab Visitor Center and for additional underground laboratory space. However, restricted net position did increase for the Net Pension Asset along with Deferred Outflows and Deferred Inflows related to pension balance. These funds are restricted for pension benefits.
- Unrestricted net position decreased to \$4,350,993.
- Total net position at year end increased to \$113,851,551.
- Charges for Services increased slightly to \$207,254. Revenue from Homestake increased slightly due to an increase in water being treated and discharged for Homestake.
- Operating Grants increased to \$19,373,689. The revenue received in this classification includes \$14,200,335 received from Lawrence Berkeley National Laboratory, \$4,520,472 from Fermi National Lab, and \$652,882 from the SD Governor's Office of Economic Development (GOED) and various smaller universities.
- Pension Related Revenue is our proportionate share of pension revenue from South Dakota Retirement System (SDRS) at \$160,924.
- Capital Grants and Contributions increased to \$7,194,368 (up \$5,164,368 from the prior year). The revenue received in this category includes \$3,950,000 from the State Legislature for the Ross Shaft rehabilitation project, \$2,000,000 from GOED for the Sanford Lab Visitor Center and Jonas Science Building renovations, \$595,000 received from private contributions, fixed assets valued at \$454,308 received from SD School of Mines & Technology, as well as \$195,060 received from Black Hills State University (BHSU) reserved for the BHSU underground campus.
- Investment Earnings decreased to \$216,435 compared to \$510,356 in the previous year primarily due to lower cash being held by the State Treasurer on behalf of the Authority. Thus a lower amount of funds being invested.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

JUNE 30, 2015

FINANCIAL HIGHLIGHTS (Continued)

- Total expenses for the Authority were \$21,046,711, which represents a small increase of 2.47% from the previous year. Of this \$21,046,711 the major expenses were contractual services – 42.6 percent, personal services – 41.4%, and supplies, materials, and operating expenses – 6.1 percent.
- A Prior Period Adjustment of \$2,045,761 was recorded for the implementation of recent GASB pronouncements since the Authority is using a June 30, 2014 pension measurement date for our fiscal year end June 30, 2015 statements. This includes our proportionate share of the collective net pension asset as of the beginning of the initial period of implementation – June 30, 2014 along with the contributions the Authority made to the pension plan between the measurement date beginning period and the beginning of the Authority's current fiscal year.
- Net position increased by \$6,200,983 for fiscal year 2015.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)
JUNE 30, 2015

FINANCIAL STATEMENT ELEMENTS:

NET POSITION

	2015	2014	Dollar Change	Percent Change
Current and Other Assets	\$ 28,183,753	\$ 34,693,186	\$ (6,509,433)	-18.76%
Capital Assets	87,652,595	73,431,145	14,221,450	19.37%
Net Pension Asset	3,809,785	-	3,809,785	100.00%
Total Assets	119,646,133	108,124,331	11,521,802	10.66%
Pension Related Deferred Outflows	3,366,693	-	3,366,693	100.00%
Total Deferred Outflows of Resources	3,366,693	-	3,366,693	100.00%
Long-Term Liabilities Outstanding	686,728	747,623	(60,895)	-8.15%
Other Liabilities	4,062,174	1,771,901	2,290,273	129.26%
Total Liabilities	4,748,902	2,519,524	2,229,378	88.48%
Pension Related Deferred Inflows	4,412,373	-	4,412,373	100.00%
Total Deferred Inflows of Resources	4,412,373	-	4,412,373	100.00%
Net Position:				
Net Investment in Capital Assets	87,131,074	72,795,253	14,335,821	19.69%
Restricted	22,369,484	27,206,266	(4,836,782)	-17.78%
Unrestricted	4,350,993	5,603,288	(1,252,295)	-22.35%
Total Net Position	\$ 113,851,551	\$ 105,604,807	\$ 8,246,744	7.81%

CHANGE IN NET POSITION

	2015	2014	Dollar Change	Percent Change
Revenues				
Program Revenues:				
Charges for Services	\$ 207,254	\$ 178,008	\$ 29,246	16.43%
Operating Grants	19,373,689	16,004,934	3,368,755	21.05%
Miscellaneous	95,024	109,249	(14,225)	-13.02%
Pension Related Revenue	160,924	-	160,924	100.00%
Capital Grants and Contributions	7,194,368	2,030,000	5,164,368	254.40%
General Revenues:				
Investment Earnings	216,435	510,356	(293,921)	-57.59%
Total Revenue	27,247,694	18,832,547	8,415,147	44.68%
Program Expenses:				
Science and Technology Authority	21,046,711	20,539,376	507,335	2.47%
Total Expense	21,046,711	20,539,376	507,335	2.47%
Change in Net Position	6,200,983	(1,706,829)	7,907,812	463.30%
Prior Period Adjustment	2,045,761	-	2,045,761	100.00%
Net Position-Beginning	105,604,807	107,311,636	(1,706,829)	-1.59%
Net Position-Ending	\$ 113,851,551	\$ 105,604,807	\$ 8,246,744	7.81%

By June 30, 2015, the Authority had invested \$87,652,595 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 \$87,652,595 (approximately 23% of this total value) was donated by Barrick Gold. This amount represents a net increase (including additions and deductions) of \$14,221,450, or 19.37 percent, over the last year.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

JUNE 30, 2015

CAPITAL ASSETS (Net of Depreciation)

	2015	2014	Change
Improvements	\$ 29,745,184	\$ 30,618,184	\$ (873,000)
Underground	17,250,828	17,055,422	195,405
Buildings	5,761,452	5,907,205	(145,753)
Computer Equipment	59,147	17,147	42,000
Equipment	7,332,534	6,993,791	338,744
Construction in Progress	24,336,743	9,679,529	14,657,214
Land	1,579,298	1,534,038	45,260
Infrastructure	1,447,426	1,486,033	(38,607)
Furniture	39,941	44,931	(4,990)
Archive Material	70,000	70,000	-
Auto	30,043	24,865	5,178
Total Capital Assets	\$ 87,652,596	\$ 73,431,145	\$ 14,221,451

This year's major capital asset additions included:

Purchased Capital Assets:

Computer Servers/Storage Arrays	\$ 89,008
2009 Chevy G3500 Passenger Van	16,900
Davis Campus Dehumidification System	508,965
Water Treatment Plant Mix Tank	110,642
Yates Work Platform	30,419
JLG T500 Scissor Lift	20,470
Concrete Bucket & Cement Hopper	36,705
HVAC Unit	17,359

Capital Assets Transferred from State:

Yates Rope Dog System	227,217
Robotic Shot Tech Arm System	171,390
Mini Track Loader	22,546
IT Generator	26,208
(2) Kubota Utility RTV's	23,085
Topcon GOT Data Collector/Micro1000 Data Loggers	25,260
Vertical Diesel Symo Power Unit	14,023
HD Video Conferencing System with Camera	13,990

Improvements (Current Year Additions):

Underground Mitigation Improvements	163,874
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Improvements in Progress (Current Year Additions):

Ross Shaft Rehabilitation	6,331,306
CASPAR Experiment Development	668,419
CASPAR Facility Development	2,356,854
BHSU Jonas Science Building Renovations	1,383,791
Sanford Lab Homestake Visitor Center	4,460,206

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)
JUNE 30, 2015

LONG-TERM DEBT

At the year-end, the Authority had \$686,728 in other long-term obligations. This is a decrease of 8.15 percent as shown below.

	2015	2014	Total Dollar Change	Total Percentage Change
Compensated Absences	\$ 342,574	\$ 284,439	\$ 58,135	20.44%
Capital Acquisition Lease	344,154	463,184	(119,030)	-25.70%
	\$ 686,728	\$ 747,623	\$ (60,895)	-8.15%

- (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 increase is due to an increase in number of employees and the corresponding amount of leave accumulated and outstanding at the end of the year. Additionally a prior operating lease was renegotiated resulting in the conversion to a capital lease. Note (4) Long-Term Debt in the Notes to Financial Statements on page 25 details this capital lease.

ECONOMIC FACTORS

- After the Homestake Mine site was selected by the National Science Foundation (NSF) on July 10, 2007, as the preferred site for the proposed national Deep Underground Science and Engineering Laboratory (DUSEL), Lawrence Berkeley National Laboratory and the South Dakota Science and Technology Authority negotiated a Memorandum of Understanding (MOU). This MOU outlined collaborative activities that would be necessary to carry out the technical design development program agreement to develop the former Homestake Mine into the DUSEL.
- The DUSEL Design Team's proposal for re-entry to continue to the 7400' level had been rejected by the National Science Foundation due to the costs involved. Thus the DUSEL (Deep Underground Science and Engineering Laboratory) concept was rejected. The current vision of the Department of Energy (DOE) proposes science labs at the 800' level and at the 4850' level in the excavated Davis Campus close to the Yates Shaft. The design team has adopted the evolving vision of Lawrence Berkeley National Laboratory (LBNL) and the DOE into the Sanford Underground Research Facility (SURF). 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 (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 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 secured to receive continued funding for Operations in the future.
- The Authority's Board of Directors (with additions throughout the year) approved a capital budget for fiscal year 2015 of \$18,566,715 towards the Ross Shaft rehabilitation project, Yates Shaft improvements, underground hazard mitigation projects, as well as other capital projects. Additional projects included experiment development for the Compact Accelerator System for Performing Astrophysical Research (CASPAR), as well as facility development for (CASPAR) and Black Hills State University on the 4850-foot level. Further projects included the Black Hills State University Jonas Science Building renovation and design and construction of the Sanford Lab Visitor Center (SLVC) located above the Open Cut in Lead. Actual expenditures for the year totaled \$16,044,227 as several of these projects approved funding extend into fiscal year 2016. Funding for these projects had been designated primarily from the Sanford funds including a portion of Gift No. 2. The Fourth Amendment to the Homestake Gift Agreement that was signed in May 2013, whereby the Authority may expend up to \$7,000,000 on three projects related to science education facilities including the Sanford Lab Visitor Center. It was also agreed that any part of Gift No. 2 not used for the above projects could be used for additional

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

JUNE 30, 2015

ECONOMIC FACTORS (Continued)

underground laboratory space and related infrastructure to access and support laboratory spaces through the shaft. Given the construction budget of the (SLVC), the Jonas Science Building renovation costs, and the anticipated cost of the third science education facility project at the Yates Dry Building, it was not possible to undertake the upgrades to the Yates Dry with current funding. This was acknowledged by the signing of the Fifth Amendment to the Homestake Gift Agreement in February 2015. The Fourth Amendment to the Homestake Gift Agreement stipulated that the Authority must raise \$1.5 million from other sources for the Black Hills State University Jonas Science Building renovation project and \$1 million for the Sanford Lab Visitor Center Project. The Authority secured a \$2 million Future Fund grant from the State of South Dakota in October 2013, which was expended in fiscal year 2015. An additional \$500,000 was received in July 2014 from Great Plains Education Foundation to finalize our monetary obligations. Black Hills State University supported the underground facility with \$200,000. Additional donations of \$95,000 were received from other private contributors. Additional funding of \$3,950,000 received in March 2015 from the SD State Legislature was expended on the designated Ross Shaft rehab project. The Authority's Board of Directors endorsed a budget of \$736,569 in favor of Authority supported activities. Actual expenses totaled \$737,599. Thus, the Authority was slightly over budget for the year.

- Additionally, an operations budget of \$13,974,507 had been approved to manage and operate the facility for the federal fiscal year October, 2014 – September 2015. Modifications to Subcontract No. 6994297 were signed with Lawrence Berkeley National Laboratory for this additional DOE funding. Actual expenditures are estimated at \$14,065,301. Thus, the Authority will be slightly over their budget allotment for the federal fiscal year.
- Further funding was received in fiscal year 2015 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. One other small subcontract supplied further funding to the Authority. Included was support for the G2-LZ (Generation 2 LUX-Zeplin) investigations.
- In late 2012, the DOE approved the Long Baseline Neutrino Experiment (LBNE) to proceed with preliminary designs to construct a large detector at SURF. 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 as well as efforts supporting the National Environmental Policy Act (NEPA) process and required environmental assessment. Other contracts added support for Phase 2 - Geotechnical Exploration for LBNE at SURF as well as preliminary engineering design of a railveyor system for transporting excavated rock from the underground. Additional support was received for Excavation and Preliminary Design, Building/Site Infrastructure, as well as funding for international support. In October 2014, as part of the internationalization effort, a group of physicists and engineers from the Long Baseline Neutrino Oscillation (LBNO) collaboration in Europe visited SURF. Presentations were made to demonstrate the capabilities of the SURF facility. The Sanford Lab was named 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 here in Lead, S.D. This will be the first truly international megascience project hosted in the United States. DOE support continues into fiscal year 2016 for the (LBNF) project.
- Additional funding was received during the fiscal year from various institutions including Case Western University, University of North Carolina, and the University of Minnesota. Funds were received at SURF to support expenditures related to a cryocooler design for the LZ (LUX-Zeplin) experiment, support for the Majorana experiment located at the 4850-foot level Davis Campus, as well as the development of Deep Underground Gravity Laboratories (DUGL) on three underground levels. Support continues in fiscal year 2016 from all institutions except Case Western University.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONCLUDED)

JUNE 30, 2015

ECONOMIC FACTORS (Continued)

- 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 2016.
- The Authority's fiscal year 2016 capital budget provides for spending \$12,215,257. A portion of this budget was previously approved in fiscal year 2015 but was not spent. Projects include continuing the Ross Shaft rehabilitation project, concluding the (CASPAR) experiment development and facility development on the 4850-foot level as well as the underground facility for Black Hills State University. Concluding the Black Hills State University Jonas Science Building renovation and the construction of the Sanford Lab Visitor Center in Lead are both on the near term horizon. Funding remains for these projects primarily from the Sanford funds including a portion of Gift No. 2. New projects include surface and underground upgrades for the future G2-LZ (Generation 2 LUX-Zeplin) experiment that will be located in the Davis Campus, as well as the procurement of xenon for the LZ experiment. 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 borrowing funds from private investors. On September 1, 2015, the South Dakota Community Foundation signed a letter of intent to loan the Authority \$2,000,000 towards to purchase of xenon. The Authority's Board of Directors also approved a budget of \$756,146 in favor of Authority supported activities.
- A Letter of 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 was documented. Funding for this agreement originated from a Letter of 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. Year two funding of \$300,000 was received from GOED in July 2015. Additional support of \$125,000 for education programs and the Sanford Science Education Center was received from Great Plains Education Foundation in August 2015.
- Additionally, an operations budget of \$13,984,422 has been submitted for approval to manage and operate the facility for the federal fiscal year October, 2015 – September 2016. \$4,257,960 has been added to this request in support of the Ross Shaft rehabilitation for the period of January 2016 through September 2016. Modification No. 33 to Subcontract No. 6994297 has been signed with Lawrence Berkeley National Laboratory extending the subcontract through November 30, 2015. Additional funding was increased to cover expenses until the current budget for funding operations at SURF is approved.
- The Authority is in compliance 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, 2015**

ASSETS

Current Assets

Cash in Local Bank and Petty Cash	\$ 1,233,440
Cash on Deposit with State Treasurer	20,086,611
Accounts Receivable	3,427,534
Interest Receivable	67,115
Prepaid Expenses	382,939
Inventory of Supplies & Warehouse	2,986,114
Total Current Assets	28,183,753

Noncurrent Assets

Net Pension Asset	3,809,785
Land	1,579,298
Underground	17,250,828
Improvements in Progress	24,336,743
Buildings, Machinery, Equipment and Infrastructure (Net) (Note 3)	44,485,726
Total Noncurrent Assets	91,462,380

TOTAL ASSETS	119,646,133
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Deferred Outflows of Resources

Pension Related Deferred Outflows	3,366,693
Total Deferred Outflows of Resources	3,366,693

LIABILITIES

Current Liabilities

Accounts Payable	3,155,481
Accrued Wages and Benefits	386,751
Accrued Leave, Benefits, and Capital Acquisition Lease (Note 4)	519,942
Total Current Liabilities	4,062,174

Long-Term Liabilities

Accrued Leave, Benefits, and Capital Acquisition Lease Net of Current Portion (Note 4)	686,728
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TOTAL LIABILITIES	4,748,902
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Deferred Inflows of Resources

Pension Related Deferred Inflows	4,412,373
Total Deferred Inflows of Resources	4,412,373

NET POSITION

Net Investment in Capital Assets	87,131,074
Restricted for:	
Mine Closure	1,378,756
Insurance	-
Indemnification	10,000,000
Interim Lab-Sanford	4,396,549
Sanford Center for Science Education	3,830,074
Pension	2,764,105
Unrestricted Net Position	4,350,993

TOTAL NET POSITION	\$ 113,851,551
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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, 2015**

Operating Revenue	
Charges for Goods and Services	\$ 207,254
Operating Grants	19,373,689
Miscellaneous	95,024
Pension Related Revenue	160,924
Total Operating Revenue	19,836,891
Operating Expenses	
Personal Services	8,716,054
Travel	164,530
Contractual Services	8,973,835
Supplies, Materials and Other Operating Expenses	1,288,714
Amortization Expense	114,371
Depreciation Expense	1,742,887
Total Operating Expenses	21,000,391
Operating Loss	(1,163,500)
Nonoperating Revenues	
Interest Revenue	216,435
Other Expense	(46,320)
Total Nonoperating Revenues	170,115
Loss Before Capital Grants	(993,385)
Capital Grants	7,194,368
Change in Net Position	6,200,983
Net Position -- Beginning of Year, restated	107,650,568
Net Position -- End of Year	\$ 113,851,551

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, 2015**

Cash Flows from Operating Activities:

Other Operating Cash Receipts	\$ 298,769
Cash Receipts from Operating Grants	17,807,355
Cash Payments to Employees for Services	(9,093,013)
Cash Payments to Suppliers of Goods and Services	(9,198,292)
Net Cash Used in Operating Activities	(185,181)

Cash Flows from Capital and Related Financing Activities:

Grant Revenue	6,661,739
Purchase of Capital Assets	(14,541,021)
Principal Paid on Capital Debt	(114,371)
Interest Paid on Capital Debt	(15,629)
Net Cash Used in Capital and Related Financing Activities	(8,009,282)

Cash Flows from Investing Activities:

Interest Earnings	221,140
Net Cash Provided by Investing Activities	221,140

Net decrease in Cash and Cash Equivalents **(7,973,323)**

Cash and Cash Equivalents at Beginning of Year 29,293,374

Cash and Cash Equivalents at End of Year **\$ 21,320,051**

Reconciliation of Operating Loss to Net Cash Used in Operating Activities:

Operating Loss	\$ (1,163,500)
<i>Adjustments to Reconcile Operating Loss to Net Cash Used in Operating Activities:</i>	
Depreciation & Amortization Expense	1,857,258
Change in Assets and Liabilities:	
Receivables	(1,569,842)
Prepaid Expenses	191,573
Inventory of Supplies	5,118
Net Pension Asset	(2,318,858)
Decrease(Increase) in Deferred Outflow of Resources - Pension	(2,811,858)
Increase (Decrease) Deferred Inflow of Resources - Pension	4,412,373
Accounts and Other Payables	1,032,094
Accrued Wages Payable	64,191
Accrued Leave Payable	116,270
Net Cash Used in Operating Activities	\$ (185,181)

Continued on next page.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**STATEMENT OF CASH FLOWS (CONTINUED)
FOR THE YEAR ENDED JUNE 30, 2015**

Cash and Cash Equivalents:

Cash in Local Bank	\$ 1,233,390
Petty Cash	50
Cash with State Treasurer	20,086,611
Total Cash and Cash Equivalents	\$ 21,320,051

Non-Cash Capital and Related Financing Activities:

Loss on Disposal of Assets	515
Donation of Capital Assets From the School of Mines	389,008
Donation of Inventory From the School of Mines	65,300

The accompanying notes are an integral part of this statement.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS JUNE 30, 2015

(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).

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, 2015

(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 propriety 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, 2015

(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 4.31 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

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, 2015.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

JUNE 30, 2015

(3) Changes in Capital Assets

A summary of changes in capital assets for the year ended June 30, 2015 is as follows:

	Balance June 30, 2014	Reclassified*	Increases	Decreases	Balance June 30, 2015
Business-Type Activities:					
Capital Assets, not Being Depreciated:					
Land	\$ 1,534,038	\$ -	\$ 45,260	\$ -	\$ 1,579,298
Underground	17,055,422	31,531	163,875	-	17,250,828
Archive Materials	70,000	-	-	-	70,000
Construction Work in Progress (Note 8)	9,679,529	(555,410)	15,212,624	-	24,336,743
Total Capital Assets, not Being Depreciated	28,338,989	(523,879)	15,421,759	-	43,236,869
Capital Assets, Being Depreciated:					
Equipment Under Capital Lease	883,945	-	-	-	883,945
Automobiles	79,255	-	16,900	9,850	86,305
Buildings	7,223,086	-	-	-	7,223,086
Furniture	74,212	-	-	-	74,212
Computer Equipment	362,465	54,283	34,725	-	451,473
Improvements	33,812,540	-	-	-	33,812,540
Infrastructure	1,658,242	-	-	-	1,658,242
Machinery and Equipment	8,553,255	1,091,401	241,399	65,179	9,820,876
Total Capital Assets, Being Depreciated	52,647,000	1,145,684	293,024	75,029	54,010,679
Total Capital Assets, Before Depreciation	80,985,989	621,805	15,714,783	75,029	97,247,548
Less Accumulated Depreciation:					
Equipment Under Capital Lease	248,053	-	114,371	-	362,424
Automobiles	54,390	-	10,737	8,865	56,262
Buildings	1,315,880	-	145,753	-	1,461,633
Computer Equipment	345,318	36,733	10,275	-	392,326
Furniture	29,280	-	4,990	-	34,270
Improvements	3,194,357	-	873,000	-	4,067,357
Infrastructure	172,209	-	38,607	-	210,816
Machinery and Equipment	2,195,357	178,060	659,528	23,080	3,009,865
Total Accumulated Depreciation	7,554,844	214,793	1,857,261	31,945	9,594,953
Capital Assets, Net	\$ 73,431,145	\$ 407,012	\$13,857,523	\$ 43,084	\$ 87,652,595

*Reclassifications are due to the Authority performing analysis of assets that were previously grouped in construction work in progress as well as equipment being put into service from inventory of supplies. Various systems or devices were transferred to equipment placed in service as of June 30, 2015.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

JUNE 30, 2015

(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	\$ 568,878	\$ 571,931	\$ 455,661	\$ 685,148	\$342,575
Capital Acquisition Lease	635,892	-	114,371	521,521	177,367
	<u>\$ 1,204,770</u>	<u>\$ 571,931</u>	<u>\$ 570,032</u>	<u>\$ 1,206,669</u>	<u>\$519,942</u>

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 through December 31, 2017. The Interest Rate is 4%. \$521,521

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, 2015, are as follows:

	Capital Acquisition Lease	
	Interest	Principal
2016	\$ 17,633	\$ 177,367
2017	10,406	184,594
2018	2,940	159,560
<u>Total</u>	<u>\$ 30,979</u>	<u>\$ 521,521</u>

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

Gross amount of assets under capital lease	\$ 883,945
Accumulated amortization	362,424
	<u>\$ 521,521</u>

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

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

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

JUNE 30, 2015

(5) Prior Period Adjustments

A Prior Period Adjustment was recorded for the implementation of recent GASB pronouncements relevant to our retirement/pension plan, since the Authority is using an allowable June 30, 2014 pension measurement date for our fiscal year end June 30, 2015 statements. This includes our proportionate share of the collective net pension asset as of the beginning of the initial period of implementation – June 30, 2014 along with the contributions the Authority made to the pension plan between the measurement date beginning period and the beginning of the Authority's current fiscal year. Beginning Net Position was restated to reflect the related net pension assets and deferred outflows of resources as of July 1, 2014 in the amount of \$2,045,761.

(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 on 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:

Per SDCL 3-12, contribution requirements of the active employees and the participating employers are established and may be amended by the SDRS Board. Covered employees are required by state statute to contribute the following percentages of their salary to the plan; Class A Members, 6.0% of salary; Class B Judicial Members, 9.0% of salary; and Class B Public Safety Members, 8.0% of salary. 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 for general employees only. The Authority's contributions to the SDRS for the fiscal years ended June 30, 2015, 2014, and 2013 was \$557,420, \$554,835, and \$548,269, respectively, equal to the required contributions each year.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**NOTES TO FINANCIAL STATEMENTS (CONTINUED)
JUNE 30, 2015**

(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, 2014, SDRS is 107% funded and accordingly has a net pension asset. The proportionate shares of the components of the net pension asset of South Dakota Retirement System, for the Authority as of June 30, 2014 are as follows:

Proportionate share of net position restricted for pension benefits	\$56,092,706
Less proportionate share of total pension liability	52,282,921

Proportionate share of net pension asset	\$ 3,809,785
	=====

At June 30 2015, the Authority reported an asset of \$3,809,785 for its proportionate share of the net pension asset. The net pension asset was measured as of June 30, 2014 and the total pension 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, 2014, the Authority's proportion was .5287996%.

For the year ended June 30, 2015, the Authority's recognized pension expense (revenue) of (\$106,924). At June 30, 2015 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.	\$ 322,359	\$
Changes in assumption.	2,486,914	
Net Difference between projected and actual earnings on pension plan investments.		4,412,373
Authority contributions subsequent to the measurement date.	557,420	
	-----	-----
TOTAL	\$ 3,366,693	\$ 4,412,373
	=====	=====

\$557,420 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, 2016. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension (revenue) as follows:

Year Ended June 30:	
2016	\$ 302,730
2017	302,730
2018	302,730
2019	694,910

TOTAL	\$ 1,603,100
	=====

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**NOTES TO FINANCIAL STATEMENTS (CONTINUED)
JUNE 30, 2015**

(6) Retirement/Pension Plan (Continued)

Actuarial Assumptions:

The total pension asset in the June 30, 2014 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 2016; 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, 2014 valuation were based on the results of an actuarial experience study for the period July 1, 2005 through June 30, 2010. 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, 2014 (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	64.0%	4.7%
Fixed Income	26.0%	1.8%
Real Estate	8.0%	5.5%
Cash	2.0%	0.8%

Total	100%	
	=====	

Discount Rate:

The discount rate used to measure the total pension asset was 7.25 percent through 2016 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 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 asset.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**NOTES TO FINANCIAL STATEMENTS (CONTINUED)
JUNE 30, 2015**

(6) Retirement/Pension Plan (Concluded)

Sensitivity of (liability) to changes in the discount rate:

The following presents the Authority’s proportionate share of net pension asset calculated using the discount rate of 7.25 percent through 2016 and 7.50 percent thereafter, as well as what the Authority’s proportionate share of the net pension 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% Decrease</u>	<u>Current Discount Rate</u>	<u>1% Increase</u>
Authority’s proportionate share of the net pension (liability) asset	\$(3,764,784)	\$3,809,785	\$9,987,636

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, 2015, 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.

Liability Insurance:

The Authority purchases liability insurance for risks related to torts; theft or damage of property; and errors and omissions of public officials from a commercial insurance carrier. 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 06/01/15 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 allows 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 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 have 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 Lead Chamber of Commerce and Black Hills State University. MOU's (Memorandum of Understanding) agreements have been signed with the applicable institutions that provide for the name "Sanford" to be used and operating agreements as stipulated in the fourth amendment. Given the construction budget of the (SLVC), the Jonas Science Building renovation costs, and the anticipated cost of the Yates Dry Building, it was not possible to undertake the upgrades to the Yates Dry with current funding. 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.

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 through 2017, resulting in an overall savings of \$150,000. Additionally, the agreement calls for the leased property to become the property of the lessee on January 1, 2018 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.

In November 2013, the Authority entered into a contract with Ainsworth-Benning Construction Company in the amount of \$3,387,284 for the construction of the Sanford Lab Visitor Center to replace the Lead Homestake Visitor Center. Subsequent change orders increased the contract amount to \$3,634,063. Construction began in July 2014 and was substantially completed by the grand opening date of June 30, 2015. Additional contracts were signed with C & G Partners, Situ Fabrication, and Formations Inc. amounting to \$733,977 for exhibit design and fabrication. Included was a sculptural model of the SURF landscape and underground tunnel network. Final invoicing and total completion of the project will occur in fiscal year 2016. Ownership will then be transferred to the Lead Chamber of Commerce.

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 2016. This project will be located in the new underground laboratory at the 4850' Level near the Ross Shaft. Another underground facility is also nearing completion in close proximity to this laboratory for Black Hills State University

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

JUNE 30, 2015

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

to support low background counting activities, biology study workstations, and other future small scale experiments. A contract with Dean Kurtz Construction was entered into in January 2014 for \$2,668,062 for the design and outfitting of both facilities. With additional change orders, the contract amount has been increased to \$2,746,300. Construction was substantially completed in September 2015 allowing experimenters to move into the facilities.

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 an average total gallons treated per minute per month. Revenue from this agreement for the past two years was \$206,036 and \$195,877 respectively. Revenue was slightly higher this last year due to the number of gallons treated being slightly higher. 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 \$218,000; 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 draft lease between the Authority and DOE for land (above ground) and space (underground) for the Long Baseline Neutrino Facility (LBNF) has been developed and concurred on by the DOE-Chicago Real Estate Committee. It has been reviewed by the Authority's legal counsel and sent to Homestake/Barrick for their review per our property donation agreement. The term of the lease goes through June 30, 2035, but shall remain in force thereafter from year to year without further notice, but shall in no event extend beyond June 30, 2100.

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 has 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 in order 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 public-private partnership with the Authority, the South Dakota Community Foundation, and other private foundations, to assist with the costs of infrastructure/laboratory upgrades, procurement of xenon for future "Dark Matter" experiments, and interest payments to private investors. The first \$2,000,000 was received from the State in September 2015. A loan agreement is in place between the Authority and South Dakota Community Foundation to secure \$2,000,000 to be used for the purchase of xenon for the future LZ experiment. This loan is an eleven year unsecured nonrecourse loan with 2.5% simple interest to be paid quarterly to the lender. The loan will be repaid at the end of the LZ experiment (approximately October 2026) from the sale proceeds of the xenon previously purchased.

(9) Construction Work in Progress

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 \$24,336,743 of construction work in progress at June 30, 2015, consisted of \$15,087,491 of accumulated costs for the Ross Shaft rehabilitation project, \$4,460,206 for the Sanford Visitor Center, \$3,393,207 for the (CASPAR) experiment and (CASPAR)-(BHSU) facility development, \$1,383,791 for the Jonas Science Center renovations, and \$12,048 for a work deck. 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, 2015 is approximately \$4,489,282. These commitments are to be paid for using current accumulated funds that have been redirected from the Sanford Gift #2, the State Legislative Appropriation balance left of the \$3.95 million received in March 2015, as well as private fund raising activities.

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

NOTES TO FINANCIAL STATEMENTS (CONTINUED)

JUNE 30, 2015

(10) Continuing Operations

The DOE's 2016 budget includes approximately \$14 million to fund basic operations at the Sanford Lab. Modification No. 33 to Subcontract No. 6994297 was signed on September 21, 2015 with LBNL extending the period of performance to November 30, 2015. The current 2016 budget is being reviewed by LBNL procurement and DOE headquarters for approval. An additional request to this contract for \$4,257,960 for the Ross Shaft refurbishment project is also at DOE headquarters for consideration. This will fund the project for approximately nine months. Another small subcontract with LBNL is still in place to fund Authority support for LUX (Large Underground Xenon) experiment. Modification No. 13 extended the period of performance through December 30, 2015. Modification No. 14 added additional funding of \$109,549 for the project. Additionally, Authority support for the LUX/Zeplin experiment design has been extended to December 31, 2015. Further support for designs for underground and surface needs for the LBNF (Long Baseline Neutrino Facility) are in place with subcontracts through FNAL (Fermi National Accelerator Laboratory). The preferred site for the detector per the scientific community is underground. In October 2014 after the visit to SURF by the international group of collaborators the Sanford Lab was named to remain the host for the (LBNF) related detectors. After further meetings, the collaboration officially transferred all responsibilities to a new collaboration referred to as the Long Baseline Neutrino Facility (LBNF) consisting of United States and International support. LBNF construction could start as early as the middle of 2017 with the experiment running through approximately 2040.

On May 8, 2013, the research project labeled DIANA (Dual Ion Accelerators for Nuclear Astrophysics) informed the Authority that they selected the Sanford Laboratory to host the experiment. The NSF (National Science Foundation) funded the design development through Notre Dame University. The construction phase of this experiment was not funded by the NSF. Instead, a smaller scale project labeled CASPAR is currently mobilizing in the Ross Campus on the 4850-foot level underground. The Authority pledged initial support of \$999,334 towards experiment development. The facility also includes a laboratory for BHSU (Black Hills State University) which is also nearing completion. Chilled water and power distribution will be shared by both groups to reduce costs.

(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 is for \$275,000 and extends to January 3, 2017. For the period of July 1, 2014 – June 30, 2015, he was paid \$102,775.50 for his consulting services. Mr. Wheeler will assist in directing the state and federal government affairs programs for the Authority. Additionally 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 *

	<u>2014</u>
Authority's proportion of the net pension liability (asset)	0.5287996%
Authority's proportionate share of net pension liability (asset)	\$ (3,809,788)
Authority's covered employer payroll	\$ 8,888,749
Authority's proportionate share of the net pension liability (asset) as a percentage of its covered-employee payroll	42.86%
Plan fiduciary net position as a percentage of the total pension liability (asset)	107%

* The amounts presented for each fiscal year were determined as of 06/30

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years for which information is available.

SCHEDULE OF EMPLOYER CONTRIBUTIONS

South Dakota Retirement System

Last 10 Fiscal Years

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

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years for which information is available.

SUPPLEMENTARY INFORMATION

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**SCHEDULE OF OPERATING EXPENSES
FOR THE YEAR ENDED JUNE 30, 2015**

Personal Services	
Employee Salaries	\$ 6,471,384
Employee Benefits	2,244,670
Total Personal Services	8,716,054
Travel	
Meals and Lodging	39,492
Auto and Fleet Services	41,064
Air - Commercial and Charter	37,762
Incidentals to Travel	2,648
Non-Employee Travel	43,311
Meals (Not Overnight)	253
Total Travel	164,530
Contractual Services	
Equipment Rental	93,643
Contractual - Other	5,288,241
Insurance	404,288
Lobbying	214,000
Computer Services	228,823
Telecommunications	48,428
Monitoring and Programming	85,668
Legal Consultant	41,728
Training	22,585
Consultant Fees - Accounting and Auditing	11,455
Promotion and Advancement	9,722
Dues and Memberships	4,049
Utilities	2,049,126
Maintenance and Repairs	472,079
Total Contractual Services	8,973,835
Supplies, Materials and Other Operating Expenses	
Maintenance and Repairs	440,918
Other Supplies and Equipment	752,837
Other Expenses	3,602
Office Supplies and Equipment	24,145
Safety	2,346
Licenses and Permits	36,999
Workshop and Registration Fees	23,948
Postage	3,375
Bank Charges	544
Total Supplies, Materials and Other Operating Expenses	1,288,714
Amortization Expense	114,371
Depreciation Expense	1,742,887
Total Operating Expenses	\$21,000,391

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
FOR THE YEAR ENDED JUNE 30, 2015**

	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	\$ 178,460
<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	13,967,413
<i>U.S. Department of Energy</i>			
Pass-Through the Regents of the University of California LUX/Zeplin (LZ) Experiment Design Engineering Support	7093667	81.7093667	200,050
<i>U.S. Department of Energy</i>			
Pass-Through Fermi National Accelerator Laboratory LBNF(Long Baseline Neutrino Facility) NEPA Environment	609755	81.609755	96,166
<i>U.S. Department of Energy</i>			
Pass-Through Fermi National Accelerator Laboratory LBNF (Long Baseline Neutrino Facility) Environmental Analysis	610998	81.610998	21,820
<i>U.S. Department of Energy</i>			
Pass-Through Fermi National Accelerator Laboratory LBNF (Long Baseline Neutrino Facility) Engineering Support	613525	81.613525	205,364
<i>U.S. Department of Energy</i>			
Pass-Through Fermi National Accelerator Laboratory LBNF (Long Baseline Neutrino Facility) Rail-veyor Design	614808	81.614808	17,146
<i>U.S. Department of Energy</i>			
Pass-Through Fermi National Accelerator Laboratory LBNF (Long Baseline Neutrino Facility) Geotechnical Exploration	614807	81.614807	677,850
<i>U.S. Department of Energy</i>			
Pass-Through Fermi National Accelerator Laboratory LBNF (Long Baseline Neutrino Facility) International Engineer. Supp.	618743	81.618743	54,875
<i>U.S. Department of Energy</i>			
Pass-Through Fermi National Accelerator Laboratory LBNF (Long Baseline Neutrino Facility) Engineering Support	618228	81.618228	234,192
<i>U.S. Department of Energy</i>			
Pass-Through Fermi National Accelerator Laboratory LBNF (Long Baseline Neutrino Facility) Excavation Prelim. Design	618741	81.618741	941,847

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

**SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
FOR THE YEAR ENDED JUNE 30, 2015**

	Pass- Through Numbers	CFDA Numbers	Amount
<i>U.S. Department of Energy</i>			
Pass-Through Fermi National Accelerator Laboratory			
LBNF (Long Baseline Neutrino Facility) Building/Site Infrastructure	620223	81.620223	844,457
<i>U.S. Department of Energy</i>			
Pass-Through University of North Carolina at Chapel Hill			
Conceptual Design for Majorana Demonstrator	5044819	81.5044819	31,998
<i>National Science Foundation:</i>			
Pass-Through Case Western Reserve University			
Mathematical and Physical Sciences	5000228814	47.049	1,194
<i>National Science Foundation:</i>			
Pass-Through Regents of the University of Minnesota			
Mathematical and Physical Sciences	A003778902	47.049	28,682
Total			\$17,501,514

Note: The schedule of expenditures of federal awards is presented on the cash basis of accounting.

SDSTA Audit Committee Teleconference

March 4, 2016

Participants:

Ms. Pat Lebrun, SDSTA Board of Director and Audit Committee Chair

Mr. Paul Christen SDSTA Board of Director

Ms. Nancy Geary, SDSTA Chief Financial Officer

Nancy Geary detailed the email received from Keith Senger – State BFM

Governor Daugaard is creating the “Governor’s Internal Control Initiative” which is intended to improve the internal control structure of the State to insure we are meeting our Operating, Reporting and Compliance objectives.

- An Internal Control Board will be created to oversee, direct, and guide the Governor’s Internal Control Initiative. This board will likely report progress (the good and the bad) directly to the Governor and GOAC.
- All agencies will be required to:
 - Identify an individual within the agency that is responsible for the agency internal controls
 - Develop, implement, document, and maintain an agency specific internal control structure sufficient to provide *reasonable* assurance the agency is achieving its *Operating, Reporting, and Compliance* objectives.
 - The agency specific internal control structure must include the five components (control environment, risk assessments, control activities, information and communication, and monitoring activities) as established by the *Standards for Internal Control in the Federal Government (The Green Book)* and the *COSO Internal Control – Integrated Framework*.
- BFM will play an advisory role to the agencies and the Internal Control Board.
- As discussed in the State of the State speech, the Governor has prioritized sub recipient activities as the first item for the agenda. I will address those issues in a separate email.
- The goals of the Governor’s Internal Control Initiative will not be accomplished overnight. I suspect a multi-year process with continuing and indefinite improvements. Thus it is very likely this process and certain requirements will be adopted into State Law and/or rule to memorialize this commitment to strengthen the State’s internal control structure and to ensure it continues indefinitely.
- I am quite certain this Initiative will require a huge commitment of agency resources. It will require continued commitment from the cabinet level, department secretaries, directors, program administrators, program staff, finance officers, accounting managers, accountants, etc. All levels of staff will be affected and should be involved.

Paul Christen recommended that we as the SDSTA should see what the State’s program entails and follow their guidelines to bolster our internal control functions. At this point there would be no reason to go any further using an outside firm to accomplish setting up a program at the SDSTA. If the State’s program is not what we envision, we could then revisit this discussion.

Pat Lebrun agreed with Paul to wait until we see what the state is doing with the Internal Control Board and follow their lead.

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Financial Report – Mr. Mike Headley

Financial Report – Attached is the SDSTA Financial Summary as of February 29, 2016. (This is a duplicate of the summary found under Agenda Item #6A SDSTA February Monthly Report in the e-Board Packet.)

Recommended Action:

Motion to accept the Financial Report as presented.

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DIVISION: ALL

BALANCE SHEET

ASSETS

		AS OF 02/29/16
CURRENT ASSETS		
First Interstate Checking	\$	1,550,301.97
First Interstate Other		27,632.44

Total in Local Checking		1,577,934.41
SD Treas: Indemnification		7,500,000.00
SD Treas: Mine Closure		1,379,921.18
SD Treas: Operating		168,270.49
SD Treas: Sanford		289,289.35
SD Treas: Sanford Gift #2		2,355,954.97
SD Treas: Experiments		3,054,502.00

Total with SD Treasurer		14,747,937.99
Billed A/R		2,004,609.80
Unbilled A/R		512,897.86
Other A/R		123,096.54
Inventory - Supplies		2,521,607.24
Inventory - Warehouse		368,921.81
Other Current Assets		292,777.09

Total Current Assets		22,149,782.74
FIXED ASSETS		
Land, Underground & Other		12,398,635.03
Bldgs & Infrastructure		8,881,327.62
Improvements		64,557,726.85
Computer Equipment		455,888.25
Equipment & Fixtures		10,146,817.44
Accum Depr & Amort		(10,370,552.35)

Total Fixed Assets		86,069,842.84
OTHER ASSETS		
Work in Process		4,328,647.80
Equipment - Capital Lease		404,065.01
Pension Deferred Outflows		7,176,478.00
Investment Captive Ins.		2,500,000.00

Total Other Assets		14,409,190.81
TOTAL ASSETS		
	\$	122,628,816.39
		=====

DIVISION: ALL

BALANCE SHEET

LIABILITIES & EQUITY

AS OF
02/29/16

CURRENT LIABILITIES

Accounts Payable	\$	1,297,540.10
Other Payables		8,091.16

Total Accounts Payable		1,305,631.26
Accrued Payroll Liab		1,200,838.97

Total Current Liabilities		2,506,470.23

OTHER LIABILITIES

LT Accrued EB/Lease		404,065.01
LT Xenon Notes Payable		2,000,000.00
Pension Deferred Inflows		4,412,373.00

Total Other Liabilities		6,816,438.01

EQUITY

Restricted: Indemnificati		7,500,000.00
Restricted: Captive		2,500,000.00
Restricted: Sanford I.Lab		289,289.35
Restricted: Mine Closure		1,379,921.18
Restricted: Sanford Gift2		2,221,455.00
Restricted: Pension		2,764,105.00
Restricted: Experim. Int.		3,054,502.00

Total Restricted Funds		19,709,272.53
Investment in Gen FA		86,069,842.84
Unrestricted Funds		7,526,792.78

Total Equity		113,305,908.15

TOTAL LIABILITIES & EQUITY

	\$	122,628,816.39
		=====

ALL

STATEMENT OF INCOME

FOR THE PERIOD ENDING 02/29/16

	YR-TO-DATE

REVENUE	
DOE Subcontracts	\$ 14,400,404.01
NSF Subcontracts	1,134.98
State Revenue	2,023,457.04
Contributions & Donations	407,781.62
Checking Interest	113.49
Interest Income	78,063.87

TOTAL REVENUE	16,910,955.01
DIRECT COSTS	
Direct Labor	4,852,916.02
ERT Labor	20,326.14
Board of Directors	9,320.70
Capital Outlay >\$5K	130,040.65
Contractual Svcs	4,405,025.81
Inventory	193,977.04
Supplies	654,526.71
Travel - Domestic	60,591.79
Travel - Foreign	34,962.18
Utilities	1,545,652.05
Other Direct Costs	162,298.77
Unallow/Unbill Costs	236,827.97

TOTAL DIRECT COSTS	12,306,465.83
INDIRECT COSTS	
Fringe Benefits	2,525,316.96
Overhead	2,708,231.38

TOTAL INDIRECT COSTS	5,233,548.34

GROSS PROFIT FROM OPERATIONS	(629,059.16)

OTHER INCOME	
Water Treatment	179,295.63
Miscellaneous Income	56,247.36
Other Operating Income	2,437.06

TOTAL OTHER INCOME	237,980.05
OTHER EXPENSES	
Loss(Gain) on Sale of FA	154,564.38
Reclass Incr Net Assets	(1,061,231.64)

TOTAL OTHER EXPENSES	(906,667.26)
	=====
NET INCOME/LOSS ()	515,588.15
	=====

DIVISION: ALL

COMPARATIVE BALANCE SHEET

ASSETS

	AS OF 02/29/16	AS OF 02/28/15	\$ CHANGE	% CHANGE
CURRENT ASSETS				
First Interstate Checking	\$ 1,550,301.97	\$ 100,049.77	\$ 1,450,252.20	1449.53%
First Interstate Other	27,632.44	32,887.63	(5,255.19)	-15.98%
	-----	-----	-----	-----
Total in Local Checking	1,577,934.41	132,937.40	1,444,997.01	1086.98%
SD Treas: Indemnification	7,500,000.00	10,000,000.00	(2,500,000.00)	-25.00%
SD Treas: Mine Closure	1,379,921.18	1,362,763.38	17,157.80	1.26%
SD Treas: Operating	168,270.49	1,211,165.00	(1,042,894.51)	-86.11%
SD Treas: Sanford	289,289.35	5,314,421.48	(5,025,132.13)	-94.56%
SD Treas: Sanford Gift #2	2,355,954.97	5,519,288.00	(3,163,333.03)	-57.31%
SD Treas: Experiments	3,054,502.00	-	3,054,502.00	100.00%
	-----	-----	-----	-----
Total with SD Treasurer	14,747,937.99	23,407,637.86	(8,659,699.87)	-37.00%
Billed A/R	2,004,609.80	2,146,597.56	(141,987.76)	-6.61%
Unbilled A/R	512,897.86	365,454.14	147,443.72	-40.35%
Other A/R	123,096.54	338,027.71	(214,931.17)	-63.58%
Inventory - Supplies	2,521,607.24	2,569,692.22	(48,084.98)	-1.87%
Inventory - Warehouse	368,921.81	369,794.91	(873.10)	-0.24%
Other Current Assets	292,777.09	286,245.06	6,532.03	2.28%
	-----	-----	-----	-----
Total Current Assets	22,149,782.74	29,616,386.86	(7,466,604.12)	-25.21%
FIXED ASSETS				
Land, Underground & Other	12,398,635.03	12,353,375.03	45,260.00	0.37%
Bldgs & Infrastructure	8,881,327.62	8,881,327.62	-	0.00%
Improvements	64,557,726.85	49,274,276.00	15,283,450.85	31.02%
Computer Equipment	455,888.25	362,464.95	93,423.30	25.77%
Equipment & Fixtures	10,146,817.44	9,455,471.64	691,345.80	7.31%
Accum Depr & Amort	(10,370,552.35)	(8,422,135.13)	(1,948,417.22)	23.13%
	-----	-----	-----	-----
Total Fixed Assets	86,069,842.84	71,904,780.11	14,165,062.73	19.70%
OTHER ASSETS				
Work in Process	4,328,647.80	5,152,633.20	(823,985.40)	-15.99%
Equipment - Capital Lease	404,065.01	579,087.12	(175,022.11)	-30.22%
Pension Deferred Outflows	7,176,478.00	-	7,176,478.00	100.00%
Investment Captive Insurance	2,500,000.00	-	2,500,000.00	100.00%
	-----	-----	-----	-----
Total Other Assets	14,409,190.81	5,731,720.32	8,677,470.49	151.39%
	=====	=====	=====	=====
TOTAL ASSETS	\$ 122,628,816.39	\$ 107,252,887.29	\$ 15,375,929.10	14.34%
	=====	=====	=====	=====

DIVISION: ALL

COMPARATIVE BALANCE SHEET

LIABILITIES & EQUITY

	AS OF 02/29/16	AS OF 02/28/15	\$ CHANGE	% CHANGE
CURRENT LIABILITIES				
Accounts Payable	\$ 1,297,540.10	\$ 1,194,097.16	\$ 103,442.94	8.66%
Other Payables	8,091.16	28,329.06	(20,237.90)	-71.44%
	-----	-----	-----	-----
Total Accounts Payable	1,305,631.26	1,222,426.22	83,205.04	6.81%
Accrued Payroll Liab	1,200,838.97	1,010,134.91	190,704.06	18.88%
	-----	-----	-----	-----
Total Current Liabilities	2,506,470.23	2,232,561.13	273,909.10	12.27%
OTHER LIABILITIES				
LT Accrued EB/Lease	404,065.01	579,087.12	(175,022.11)	-30.22%
LT Xenon Notes	2,000,000.00	-	2,000,000.00	100.00%
Pension Deferred Inflows	4,412,373.00	-	4,412,373.00	100.00%
	-----	-----	-----	-----
Total Other Liabilities	6,816,438.01	579,087.12	6,237,350.89	1077.10%
	-----	-----	-----	-----
TOTAL LIABILITIES	9,322,908.24	2,811,648.25	6,511,259.99	231.58%
EQUITY				
Restricted: Indemnificati	7,500,000.00	10,000,000.00	(2,500,000.00)	-25.00%
Restricted: Captive	2,500,000.00	-	2,500,000.00	100.00%
Restricted: Sanford I.Lab	289,289.35	5,314,421.48	(5,025,132.13)	-94.56%
Restricted: Mine Closure	1,379,921.18	1,362,763.38	17,157.80	1.26%
Restricted: Sanford Gift2	2,221,455.00	5,519,288.00	(3,297,833.00)	-59.75%
Restricted: Pension	2,764,105.00	-	2,764,105.00	100.00%
Restricted: Experim. Int.	3,054,502.00	-	3,054,502.00	100.00%
	-----	-----	-----	-----
Total Restricted Funds	19,709,272.53	22,196,472.86	(2,487,200.33)	-11.21%
Investment in Gen FA	86,069,842.84	71,898,698.84	14,171,144.00	19.71%
Unrestricted Funds	7,526,792.78	10,346,067.34	(2,819,274.56)	-27.25%
	-----	-----	-----	-----
TOTAL EQUITY	113,305,908.15	104,441,239.04	8,864,669.11	8.49%
	=====	=====	=====	=====
TOTAL LIABILITIES & EQUITY	\$ 122,628,816.39	\$ 107,252,887.29	\$ 15,375,929.10	14.34%
	=====	=====	=====	=====

COMPARATIVE STATEMENT OF INCOME

FOR THE PERIOD ENDING 02/29/16

	YEAR TO DATE	PRIOR YEAR TO DATE	\$ CHANGE	% CHANGE
REVENUE				
DOE Subcontracts	\$ 14,400,404.01	\$ 10,434,916.80	\$ 3,965,487.21	38.00%
NSF Subcontracts	1,134.98	15,415.59	(14,280.61)	-92.64%
State Revenue	2,023,457.04	1,368,662.95	654,794.09	47.84%
Contributions & Donations	407,781.62	590,000.00	(182,218.38)	-30.88%
Checking Interest	113.49	47.78	65.71	137.53%
Interest Income	78,063.87	130,756.91	(52,693.04)	-40.30%
	-----	-----	-----	-----
TOTAL REVENUE	16,910,955.01	12,539,800.03	4,371,154.98	34.86%
DIRECT COSTS				
Direct Labor	4,852,916.02	4,870,552.23	(17,636.21)	-0.36%
ERT Labor	20,326.14	23,652.00	(3,325.86)	-14.06%
Board of Directors	9,320.70	3,433.62	5,887.08	171.45%
Capital Outlay >\$5K	130,040.65	25,299.00	104,741.65	414.01%
Contractual Svcs	4,405,025.81	1,755,531.01	2,649,494.80	150.92%
Emergency Resp	-	2,346.49	(2,346.49)	-100.00%
Inventory	193,977.04	233,242.93	(39,265.89)	-16.83%
Supplies	654,526.71	440,402.94	214,123.77	48.62%
Travel - Domestic	60,591.79	49,474.58	11,117.21	22.47%
Travel - Foreign	34,962.18	24,216.81	10,745.37	44.37%
Utilities	1,545,652.05	1,288,979.29	256,672.76	19.91%
Other Direct Costs	162,298.77	89,640.36	72,658.41	81.06%
Unallow/Unbill Costs	236,827.97	271,474.92	(34,646.95)	-12.76%
	-----	-----	-----	-----
TOTAL DIRECT COSTS	12,306,465.83	9,078,246.18	3,228,219.65	35.56%
INDIRECT COSTS				
Fringe Benefits	2,525,316.96	2,272,790.60	252,526.36	11.11%
Overhead	2,708,231.38	2,505,407.79	202,823.59	8.10%
	-----	-----	-----	-----
TOTAL INDIRECT COSTS	5,233,548.34	4,778,198.39	455,349.95	9.53%
	-----	-----	-----	-----
GROSS PROFIT	(629,059.16)	(1,316,644.54)	687,585.38	52.22%
OTHER INCOME				
Water Treatment	179,295.63	115,439.67	63,855.96	55.32%
Miscellaneous Income	56,247.36	40,488.28	15,759.08	38.92%
Other Operating Income	2,437.06	-	2,437.06	100.00%
	-----	-----	-----	-----
TOTAL OTHER INCOME	237,980.05	155,927.95	82,052.10	52.62%
OTHER EXPENSES				
Loss(Gain) on Sale of FA	154,564.38	2,852.14	151,712.24	5319.24%
Reclass Incr Net Assets	(1,061,231.64)	(896,554.61)	(164,677.03)	18.37%
	-----	-----	-----	-----
TOTAL OTHER EXPENSES	(906,667.26)	(893,702.47)	(12,964.79)	1.45%
	=====	=====	=====	=====
NET INCOME/LOSS ()	\$ 515,588.15	\$ (267,014.12)	\$ 782,602.27	293.09%
	=====	=====	=====	=====

South Dakota Science & Technology Authority
Available Cash
2/9/2016

Cash Total Checking/Savings	\$ 1,557,934
Cash With State Treasurer	<u>\$ 14,747,938</u>
Total Cash	\$ 16,305,872
Less: Restricted Funds	
Indemnification/Mine Closure	\$ (8,879,921)
Experiments (Xenon, Interest,Infrastructure)	<u>\$ (3,054,502)</u>
Total Cash Available for Infrastructure Upgrades and Operations	\$ 4,371,449
Less: Total Liabilities w/out Xenon Notes Payable & Pension	<u>\$ (2,397,637)</u>
Available Cash	<u><u>\$ 1,973,812</u></u>

SDSTA Operating Budget Summary FY2016

Actual vs Budget

Feb.2016 & YTD

	\$ Over/Under				\$ Over/Under				
	February 2016	Budget	Budget	% of Budget	Actual YTD	YTD Budget	Budget	% of Budget	% Remaining
100%									
SDSTA (Authority) Direct Charges									
Board of Directors	\$17,997.00	\$19,850.00	\$1,853.00	90.67%	\$154,494.00	\$157,801.00	\$3,307.00	97.90%	2.10%
Executive Office	\$22,493.00	\$23,576.00	\$1,083.00	95.41%	\$127,782.00	\$134,018.00	\$6,236.00	95.35%	4.65%
Science Center E & O	\$0.00	\$0.00	\$0.00	0.0%	\$26,028.00	\$25,749.00	-\$279.00	101.08%	-1.08%
Science Liaison	\$813.00	\$373.00	-\$440.00	217.96%	\$1,535.00	\$2,984.00	\$1,449.00	0.00%	100.00%
Sanf.L.Visitor C. (Director)	\$6,298.00	\$6,131.00	-\$167.00	102.72%	\$47,234.00	\$50,800.00	\$3,566.00	92.98%	7.02%
Subtotal	\$47,601.00	\$49,930.00	\$2,329.00	95.34%	\$357,073.00	\$371,352.00	\$14,279.00	96.15%	3.85%
Federal/State Funding - Direct Charges									
Fermi P.O.#618228 Staff Services	\$0.00	\$0.00	\$0.00	0.0%	\$298,415.00	\$230,062.00	-\$68,353.00	129.71%	-29.71%
Fermi P.O.#618741 Excav.Des.	\$264,832.00	\$275,000.00	\$10,168.00	96.3%	\$1,252,747.00	\$1,416,157.00	\$163,410.00	88.46%	11.54%
Fermi P.O.#620223 Building/Infra.	\$44,323.00	\$50,000.00	\$5,677.00	88.65%	\$1,930,385.00	\$2,292,987.00	\$362,602.00	84.19%	15.81%
Fermi P.O.#622034 WasteRockSt.	\$0.00	\$0.00	\$0.00	0.0%	\$56,150.00	\$69,200.00	\$13,050.00	81.14%	18.86%
Fermi P.O.#623825 RiskWShop	\$0.00	\$0.00	\$0.00	0.0%	\$22,567.00	\$24,269.00	\$1,702.00	92.99%	7.01%
Fermi P.O.#624787 BlastStudy	\$1,277.00	\$1,500.00	\$223.00	85.13%	\$62,610.00	\$68,500.00	\$5,890.00	91.40%	8.60%
Fermi P.O.#624751 Director Review	\$0.00	\$0.00	\$0.00	0.0%	\$3,813.00	\$6,653.00	\$2,840.00	57.31%	42.69%
Fermi P.O.#625206 CD3Review	\$0.00	\$0.00	\$0.00	0.0%	\$5,022.00	\$7,650.00	\$2,628.00	65.65%	34.35%
Fermi P.O.#625500 F.SiteFacil.Servic	\$19,190.00	\$22,977.00	\$3,787.00	83.52%	\$38,646.00	\$42,754.00	\$4,108.00	90.39%	9.61%
Fermi P.O.#625501 Engin.Services	\$17,152.00	\$18,583.00	\$1,431.00	92.3%	\$27,687.00	\$32,123.00	\$4,436.00	86.19%	13.81%
Fermi P.O.#625691 B/Site Final Des.	\$46,705.00	\$50,000.00	\$3,295.00	93.41%	\$46,705.00	\$50,000.00	\$3,295.00	93.41%	6.59%
Fermi P.O.#625692 Pre Excav.F.D.	\$7,464.00	\$50,000.00	\$42,536.00	14.93%	\$7,464.00	\$50,000.00	\$42,536.00	14.93%	85.07%
LBNL LUX C#6973786	\$12,623.00	\$9,721.00	-\$2,902.00	129.85%	\$77,899.00	\$83,539.00	\$5,640.00	93.25%	6.75%
LBNL Operations C#6994297	\$1,016,542.00	\$1,047,474.00	\$30,932.00	97.05%	\$7,286,760.00	\$7,541,449.00	\$254,689.00	96.62%	3.38%
LBNL LUX/Zepplin C#7093667	\$0.00	\$0.00	\$0.00	0.0%	\$50,721.00	\$58,992.00	\$8,271.00	85.98%	14.02%
LBNL LUX/Zepplin C#7255146	\$28,263.00	\$21,208.00	-\$7,055.00	133.27%	\$84,703.00	\$75,634.00	-\$9,069.00	111.99%	-11.99%
LBNL Ross Rehab C#7262800	\$296,639.00	\$423,273.00	\$126,634.00	70.08%	\$544,581.00	\$985,916.00	\$441,335.00	55.24%	44.76%
MJD (Majorana) # 5-4473	\$0.00	\$0.00	\$0.00	0.0%	\$9,130.00	\$12,000.00	\$2,870.00	76.08%	23.92%
MJD (Majorana) ORNL144149	\$2,067.00	\$2,000.00	-\$67.00	103.35%	\$6,026.00	\$6,000.00	-\$26.00	100.43%	-0.43%
CUBED - USD	\$0.00	\$0.00	\$0.00	0.0%	\$739.00	\$1,000.00	\$261.00	73.90%	26.10%
BHSU-UGCampus Gen.Serv.	\$61.00	\$200.00	\$139.00	30.5%	\$61.00	\$200.00	\$139.00	30.50%	69.50%
Sanf.Sci.Ed.Center - GOED Funded	\$28,025.00	\$30,000.00	\$1,975.00	93.42%	\$266,210.00	\$257,085.00	-\$9,125.00	103.55%	-3.55%
U. of Minn. DUGL#A003778902	\$0.00	\$0.00	\$0.00	0.0%	\$908.00	\$2,000.00	\$1,092.00	45.40%	54.60%
SDSM&Tech CASPAR Gen.Serv.	\$5,037.00	\$4,800.00	-\$237.00	104.94%	\$5,037.00	\$4,800.00	-\$237.00	104.94%	-4.94%
* Xilinx, Inc. P.O.#732495	\$295.00	\$400.00	\$105.00	73.75%	\$1,944.00	\$3,720.00	\$1,776.00	52.26%	47.74%
Subtotal	\$1,790,495.00	\$2,007,136.00	\$216,641.00	89.21%	\$12,086,930.00	\$13,322,690.00	\$1,235,760.00	90.72%	9.28%
Indirect Expenses									
Indirect Charges Personnel	\$110,193.00	\$115,000.00	\$4,807.00	95.82%	\$879,900.00	\$897,634.00	\$17,734.00	98.02%	1.98%
Indirect Charges Other	\$280,341.00	\$293,669.00	\$13,328.00	95.46%	\$2,080,990.00	\$1,818,726.00	-\$262,264.00	114.42%	-14.42%
Subtotal	\$390,534.00	\$408,669.00	\$18,135.00	95.56%	\$2,960,890.00	\$2,716,360.00	-\$244,530.00	109.00%	-9.00%
Totals	\$2,228,630.00	\$2,465,735.00	\$237,105.00	90.38%	\$15,404,893.00	\$16,410,402.00	\$1,005,509.00	93.87%	6.13%

* Private Corporation (Commercial Group)

SDSTA CAPEX Budget Summary FY15/16
Actual vs Budget
February 2016 & YTD

Budget Area	FY2016 Monthly				FY2016 YTD				
	Actual Month	Budget	\$ Over/Under Budget	% of Budget	Actual YTD	Budget	\$ Over/Under Budget	% of Budget	% Remaining
									100.00%
Operational CAPEX	\$ 216,153.21	\$ 244,373.00	\$ 28,219.79	88.45%	\$ 5,826,879.55	\$ 12,415,257.00	\$ 6,588,377.45	46.93%	53.07%
TOTAL CAPEX	\$ 216,153.21	\$ 244,373.00	\$ 28,219.79	88.45%	\$ 5,826,879.55	\$ 12,415,257.00	\$ 6,588,377.45	46.93%	53.07%

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

Project #	Project Description	Feb. 2016	Budget	\$ Over/UnderBudget	% of Budget
CAP2012-27	Ross Shaft Furnishings Repl.M&S	\$ 264.15	\$ -	\$ (264.15)	100.00%
CAP2012-28	Work Decks	\$ -	\$ -	\$ -	0.00%
CAP2012-32	SDSTA Personnel	\$ 3,176.15	\$ 2,473.00	\$ (703.15)	128.43%
CAP2014-01	Sanford Visitor Center Design & Construction	\$ 4,939.59	\$ -	\$ (4,939.59)	100.00%
CAP2014-05	CASPAR Experiment Development	\$ -	\$ -	\$ -	0.00%
CAP2014-06	BHSU Jonas Science Building Renovation	\$ 177,571.50	\$ 200,000.00	\$ 22,428.50	12.63%
CAP2014-09	CASPAR Facility Development	\$ (2,293.58)	\$ -	\$ 2,293.58	-100.00%
CAP2014-11	BHSU Facility Development	\$ 3,720.13	\$ -	\$ (3,720.13)	100.00%
CAP2016-01	Sanford Visitor Center Exhibit Davis Tribute	\$ -	\$ -	\$ -	100.00%
CAP2016-02	LZ Surface & Facility Upgrades	\$ 17,402.00	\$ 31,900.00	\$ 14,498.00	54.55%
CAP2016-03	LZ Xenon Gas	\$ 3,604.55	\$ -	\$ (3,604.55)	100.00%
CAP2016-04	Water Inflow Project - Pipe Fusing	\$ 7,768.72	\$ 10,000.00	\$ 2,231.28	28.72%
	Monthly Totals	\$ 216,153.21	\$ 244,373.00	\$ 28,219.79	88.45%

SD Science & Technology Authority
Operational CAPEX Budget
YTD FY2016 Actual vs Budget

Project #	Project Description	February YTD	FY2016 Budget	\$ Over/UnderBudget	% of Budget	% Remaining
						100%
CAP2012-27	Ross Shaft Furnishings Repl.M&S	\$1,396,941.26	\$ 3,212,394.00	\$ 1,815,452.74	43.49%	56.51%
CAP2012-28	Work Decks	\$28,601.47	\$ 34,577.00	\$ 5,975.53	82.72%	17.28%
CAP2012-32	SDSTA Personnel	\$1,219,020.09	\$ 2,399,004.00	\$ 1,179,983.91	50.81%	49.19%
CAP2014-01	Sanford Visitor Center Design & Construction	\$288,434.10	\$ 337,017.00	\$ 48,582.90	85.58%	14.42%
CAP2014-05	CASPAR Experiment Development	\$40,739.94	\$ 301,347.00	\$ 260,607.06	13.52%	86.48%
CAP2014-06	BHSU Jonas Science Building Renovation	\$602,021.14	\$ 1,116,209.00	\$ 514,187.86	53.93%	46.07%
CAP2014-09	CASPAR Facility Development	\$899,203.97	\$ 959,709.00	\$ 60,505.03	93.70%	6.30%
CAP2014-11	BHSU Facility Development	\$314,616.16	\$ 275,000.00	\$ (39,616.16)	114.41%	-14.41%
CAP2016-01	Sanford Visitor Center Exhibit Davis Tribute	\$71,351.59	\$ 80,000.00	\$ 8,648.41	89.19%	10.81%
CAP2016-02	LZ Surface Facility Upgrades	\$261,929.02	\$ 1,500,000.00	\$ 1,238,070.98	17.46%	82.54%
CAP2016-03	LZ Xenon Gas	\$696,252.09	\$ 2,000,000.00	\$ 1,303,747.91	34.81%	65.19%
CAP2016-04	Water Inflow Project - Pipe Fusing	\$7,768.72	\$ 200,000.00	\$ 192,231.28	3.88%	96.12%
	Totals	\$5,826,879.55	\$ 12,415,257.00	\$ 6,588,377.45	46.93%	53.07%

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Executive Director's Report – Mr. Mike Headley

The Executive Director's Report includes the following:

- 6A. SDSTA February Monthly Report, attached.
- 6B. Declarations of Surplus attached (125hp Root Blowers and Yates Crusher Equipment; *no action required*).
- 6C. Discuss Intergovernmental Agreement between the South Dakota Office of Risk Management and SDSTA, attached. (*motion below*)
- 6D. Discuss MOU Amendment for the Visitor Center and Instrument of Conveyance, attached. (*motion below*)
- 6E. Operations Update by Lab Director Walter Weinig (*10 min presentation followed by 5 min Q/A*).
- 6F. Science Update by Science Director Jaret Heise (*10 min presentation followed by 5 min Q/A*).

Recommended Action:

6C. Motion to re-authorize the executive director to sign the amended Intergovernmental Agreement between the South Dakota Office of Risk Management and SDSTA.

6D. Motion to authorize the executive director to sign the First Amendment to the Memorandum of Understanding between the Homestake Visitor Center and SDSTA concerning the Creation and Operation of the Visitor Center and the chairperson to sign the Instrument of Conveyance after a conditional assignment is received and approved.

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

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South Dakota Science and Technology Authority

Monthly Report

February 2016

Walter Weinig, Laboratory Director

Executive Summary

Science

Large Underground Xenon – LUX

LUX continues to be in a stable data-taking mode and has now accumulated about 258 live days, about 86 percent of the goal of 300 live days for this run. There was a short interruption to xenon circulation in February. The interruption had essentially no effect on data quality as xenon purity remained very high at 2600 microseconds (electron lifetime). The end of data taking is projected to be in May 2016.

February was a significant month for LUX calibrations. Quarterly tritium calibrations and the neutron generator was run in a short-pulse mode. A commissioning summary for the modified neutron generator is expected to be received from LUX soon.

MAJORANA DEMONSTRATOR – MJD

Significant effort on Module 2 continued through February, including preparation and assembly of detector strings and installation of the crossarm shielding and thermosyphon. By the end of the month, all strings had been assembled for Module 2. Commissioning continued through February with Module 1 in the shield, including collecting background data and making improvements to the calibration system. A leak has been identified in the Module 1 cryostat gasket that will require removal from the shield at some point in the future.

The MJD Operations Review originally scheduled for June 16-17 in Lead, SD will likely occur in mid-July due to conflicts with other MJD activities.

Compact Accelerator System for Performing Astrophysical Research (CASPAR) and BHSU Underground Campus (BHUC)

Beamline assembly and component wiring continued through February. Another member of the CASPAR Safety Readiness Review Committee visited Sanford Lab in February to both review the CASPAR progress as well as the LUX neutron generator.

Cleanliness protocols for the BHUC laboratory continue to evolve, with dedicated clean PPE starting to be used on a regular basis in February. Interest in BHUC space continues to be strong. The BLBF group continued to operate two low-background counters in February, with one counter assaying production samples while maintenance was performed on the second system to improve the shield nitrogen purge. Approximately 40,000 kg of lead was received from the Soudan Underground Lab in early February, a portion of which will be used for the SOLO detector shield once a design is approved.

Ross Shaft Rehabilitation

Five sets of new steel were installed in February 2016. This span covered 90 feet and reached a depth of 3,536.9 feet. Crews completed an extensive shaft inspection and concurrent maintenance tasks.

Yates Shaft

Top Down Maintenance bolted and laced 22 panels in the cage compartment in February. The 3200L station was completely refurbished. Crews transported 129 loads of material underground to support science and construction efforts.

Facility Infrastructure

At the end of January, the water level in the underground pool was at 5,794 feet. The net gain for the month was 25 feet. Water inflows above the 3650L are averaging 204 gallons per minute. Installation of a six-inch waterline from the Yates to the Ross Campus across the 4850L is complete and certificates of occupancy have been issued by the City of Lead.



South Dakota Science and Technology Authority

Monthly Report

February 2016

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

Data analysis and planning for the follow-up LBNF test blasting exercise continued in February, with the next test blasts scheduled for March 8-10. The proposed alignment and depth range for the new ventilation raise are being re-evaluated following a site visit by the design consultants in December.

Environment, Safety and Health

There were no environmental compliance issues during the month of February. No recordable injuries occurred during the month.

Communications / Education and Outreach / Cultural

Piloting of curriculum units continues with most of the units in circulation in February. So far, over 40 registrations have been received for the summer teacher professional development workshops on the six units. E&O Deputy Director Peggy Norris attended the South Dakota Science Teachers Association annual conference February 4-6 and gave two workshops.

Interviews have been completed for the Dave Bozied and Chris Bauer internships. Interviews have also been completed for the Davis-Bahcall Scholars program. Final selections for internships and the Davis-Bahcall Scholars Program will be complete the first week of March.

The Cultural Advisory Committee met on February 17 for their annual review. The committee made a number of recommendations which are now under review by management.

The E&O team presented the February 'Deep Talks' at the Sanford Lab Homestake Visitor Center on February 11. Sixty-one people attended, including local community members, Sanford Lab staff members and members of the science collaborations.

Finance, Contracts, and Human Resources

For Sanford-funded work, the SDSTA finished February \$2,329 under budget and is \$14,279 under budget for the South Dakota state fiscal year. For DOE-funded operations, the SDSTA was under budget by \$39,106.

Two interim funding requests were submitted to LBNL addressing deferred maintenance on motor-generator (M-G) sets in the Yates cage and ore hoists. The requests total \$1,426,248. The SDSTA currently employs 128 full-time and 16 temporary staff members at Sanford Lab.

Underground Access Department
Bryce Pietzyk, Acting Director of Underground Access

Ross Shaft

Five sets of new steel were installed in February. This span covered a distance of 90 feet and reached a depth of 3,536.9 feet. An extensive shaft inspection was completed at the end of the month. Maintenance and a number of tasks were completed during this time. Tasks included monthly and quarterly inspection of the refuge chambers on the 1250L and 2450L. Pipe clamps were tightened from set 201 to 211, and quality assurance/quality control (QA/QC) controls were completed for sets 205 to 210. Electricians banded cable from sets 205 to 210. Thirty-day hoist preventive maintenance and monthly shaft inspections were also completed. Project work resumed on March 1.

Yates Shaft

Top Down Maintenance (TDM) bolted 22 panels in the cage compartment and all sets are laced in. The 3200L station was completely refurbished by removing the existing timber overhead protection and installing new ground support. This also included removing muck/debris on the station and spreading new aggregate to improve footing. The Yates crews also installed 52 pipe bracket anchors on the 4850L Yates station and continued to tighten guide bolts in the skip compartments during afternoon day shifts. In addition, crews transported 129 loads of material underground to support science and construction efforts.

Underground Maintenance Crew (UMC)

The Fletcher bolter has commenced the bolting campaign on the South side of the 4850L West Lab Access Drift. This work started at the Governor’s Corner and will work toward the Yates Shaft. Ground support installation on the 4850L is ongoing in the East Lab Access Drift. Both bolting fronts will continue for several months. Work on the 2000L Water Inflow Project continued with several activities accomplished. One of the major activities accomplished was successfully anchoring the elbow collar into the new raise near the Ellison Shaft. Mobilizing of supplies/equipment and improving the pathway to the raise was necessary for the installation. Grouting the annular space between the steel collar and rock scheduled was completed the first week in March.

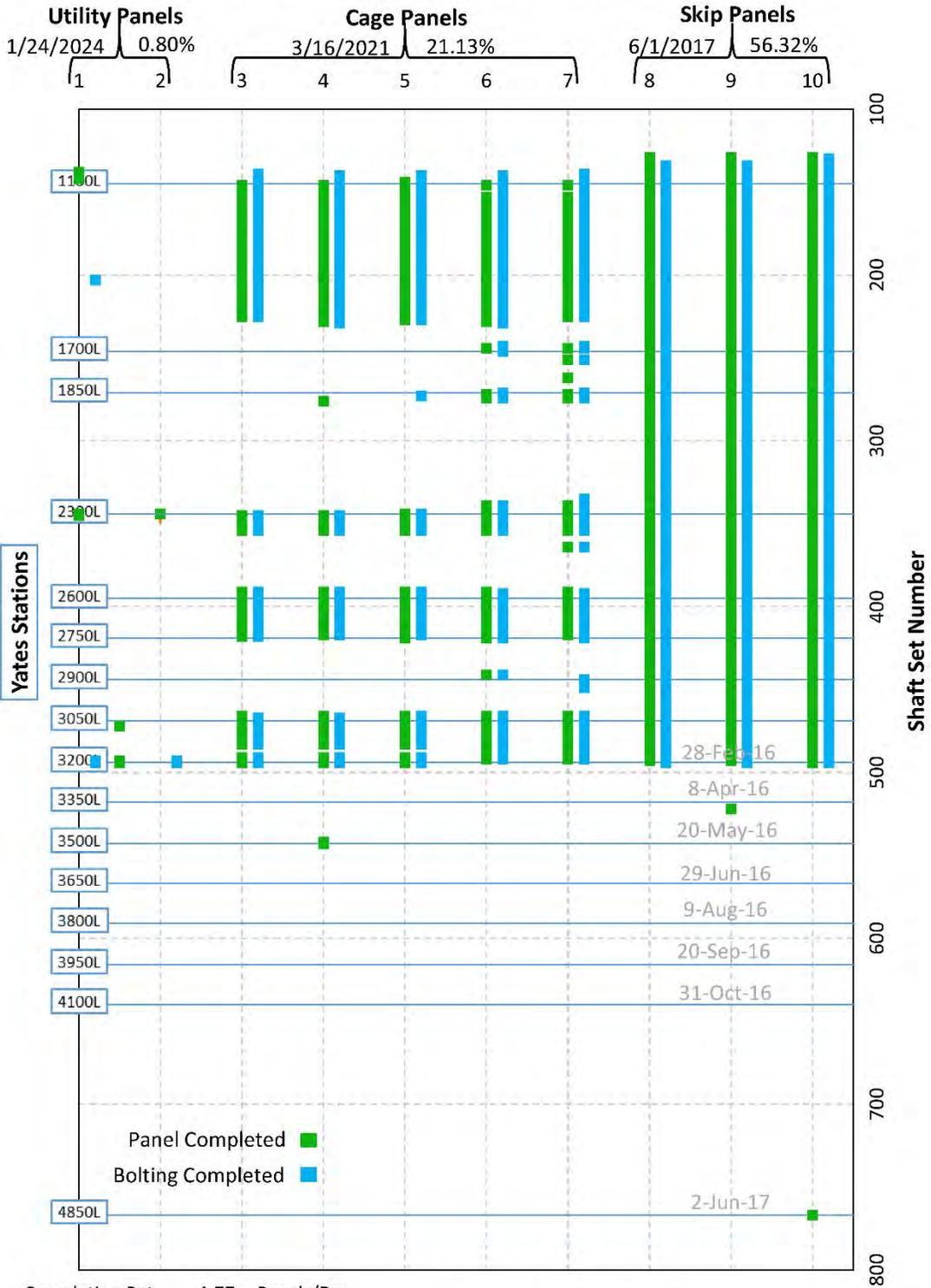


Underground Maintenance Crew:
Inspecting rigging before hoisting elbow collar into raise on the 2000L.



Yates: Refurbished 3200L station.

Yates TDM Progress - Feb 2016



Completion Rate 1.77 Panels/Day

Time Remaining 2888 Days 7.91 Years

Project Complete 1/24/2024

Total Completion 25.18%

Yates: Top Down Maintenance Progress February 2016

Facility Infrastructure Department

Tim Baumgartner, Director of Facility Infrastructure

Summary

Facility Infrastructure effort in February was directed to the following areas: facility maintenance, equipment repair, preventative maintenance, electrical, and cyber infrastructure. During February, the facility infrastructure team continued to work extensively with the Engineering and Science Departments to focus on refining the operations and maintenance of specific subsystems including carbon monoxide (CO) monitoring, underground phones, leaky feeder (radio), power quality, building upgrades, pumping, dewatering, hoist maintenance and repairs, shaft and science support and construction projects.

Davis and Ross Campus Maintenance

The team monitored and assisted with new equipment installation and ensured the manufacturer standards were met. Electrical inspections and documentation for Surface Lab equipment are continuing. Also, residue acid from copper cleaning was transported to the surface. Yates Shaft personnel assisted with delivery of supplies to the Davis Campus and participated in evacuation drills. Air handling equipment preventive maintenance actions continue with Johnson Controls. The Fire alarm system was assessed and corrections were made by the vendor. Oxygen sensors at the Ross Campus were replaced with sensors standard to the rest of the facility. The Ross Campus has been awarded its Certificate of Occupancy.

Surface Facility Maintenance Building and Grounds

The SDSTA completed all seven (7) day, thirty (30) day, and annual (360) day preventative maintenance activities. Three staff members participated in the monthly Safety Committee meeting. Boart drill and jackleg repairs continue. The Yates Crusher room cleanup effort has been completed and the Yates Headframe maintenance hoist replacement continues. Lastly, shaft conveyance activities are underway.

Waste Water Treatment Plant (WWTP)

At the end of February, the water level in the underground pool was at 5,794 feet. The total net gain for the month was 25 feet. Water inflows above the 3650L are averaging 204 gallons per minute. The team continues to support MAJORANA with neutralizing chemical by-products of their process. All preventative maintenance duties were performed. A dry granular type of flocculent to replace fluids has been implemented to improve the iron removal process and is showing good results. A new indoor geo tube system is being designed and installed to dewater the sludge and make disposal easier and more economical.

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 and support equipment. The team continues to work with Fletcher and Boart Longyear to test various types of drill steel and bits on existing equipment. Locomotive 8T2 was placed back into service.

Electrical and Cyber Infrastructure

During February, the SDSTA performed shaft pump preventative maintenance. 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 functional copper-based phones and FEMCO (i.e. twisted pair) phones at each underground facility level. Work continues planning and preparing for cable replacement to energize medium voltage cables between the 4550L and 3550L in the Ross Shaft. Level monitoring and 4100L sump project control has been completed. The team continues the Compact Accelerator System for Performing Astrophysical Research (CASPAR) and Black Hills State University Underground Campus (BHUC) inspections, outfitting and installations.

Dewatering

The dewatering team is currently focusing on high pressure water systems and shaft rehabilitation support. Ross Shaft pump column repairs/upgrades continue. Installation of a six-inch waterline from the Yates to the Ross Campus across the 4850L is complete. Final connections and testing at the Ross Campus and the Yates Shaft are complete. Installation began on new piping and valve assembly at the Ross Shaft 3200L. In addition, Standard Operating Procedures (SOPs) and Job Hazard Analyses (JHAs) continue to be developed.

Engineering Department
Walter Weinig, Engineering Director

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

An effort was initiated in September 2015 to design and implement a Blast Vibration Study (BVS) to confirm potential impacts that LBNF excavation may have on existing science at Sanford Lab. Data from the initial test blast were assessed in February 2016 and a work plan developed to execute additional test blasts in March. A trim blast and up to two additional test blasts are planned for March 8-10.

Sanford Lab staff worked with LBNF to assess logistics for transporting material through the Ross Shaft, particularly long beams and corner sections. Sanford Lab staff also worked with LBNF and Arup personnel to evaluate options for placement of a control room for the DUNE experiment.

Evaluation of the proposed alignment and depth range for the new ventilation raise continued in February. Arup, LBNF/DUNE, and Sanford Lab personnel are reviewing geologic information, infrastructure considerations and past reports to refine the design of the ventilation raise.

The scope and timing of tasks to be executed prior to full-scale excavation are being re-evaluated by LBNF, Arup, and Sanford Lab personnel. This includes the sequence of execution for the Ross Shaft refurbishment and modifications to the brow of the Ross Shaft station on the 4850L.

CASPAR (Compact Accelerator System for Performing Astrophysical Research) and BHSU Underground Campus (BHUC)

Engineering staff continued inspection of electrical equipment for the CASPAR experiment. Equipment alignment is expected in the near future. The SOLO low-background counter was moved from Soudan and will be installed in the BHUC to support the upcoming LZ experiment.

In support of both the CASPAR and BHUC, a new water supply is required to supply both the cooling system and the fire sprinkler system. Installation and testing of the new piping and valves for the fire-water station was completed in February. The City of Lead issued Certificates of Occupancy for CASPAR and BHUC on February 8, 2016.

LUX-ZEPLIN (LZ)

The Engineering Department continued to work with Leo A Daly to advance the design of the facilities necessary for the LZ experiment both on the surface and in the Davis Campus Underground. Staff participated in the Critical Decision-2 (CD-2) Director's Review held at LBNL in February and prepared for a final design review held at Sanford Lab March 1-3.

Facility Infrastructure

The Engineering Department continued to support surface and underground facility infrastructure teams. Key projects include evaluating options for hoist refurbishment or upgrades, design and fabrication of a new bonnet for the Yates skip, assessment of pump system alternatives, changes to the acid-waste handling equipment in the wastewater treatment plant, evaluation of options for expanded toilet facilities on the 4850L, and support for the water-inflow mitigation project.

Environment, Safety and Health (ESH) Department

Noel A. Schroeder, ESH Director

There were no environmental compliance issues during the month of February. The Sanford Laboratory Tier II Report was prepared and submitted to the SD Department of Environment and Natural Resources.

Environmental Compliance

Water

Waste Water Discharge Summary through March 2, 2016:

- *Total water discharged through outfall 001 since June 5, 2008: 5,396,242,941 gallons*
- *Total Underground water treated since June 5, 2008: 3,179,234,898 gallons*
- *Total Tailing water treated since June 5, 2008: 2,367,951,088 gallons*
- *Total water discharged to sewer since June 5, 2008: 104,341,211 gallons*

There continues to be no news in regard to the renewal for the National Pollution Discharge Elimination System (NPDES) Permit SD0000043. SDSTA has been legally operating (discharging underground water and Barrick's tailing water) under this expired, but still existing permit.

The January Discharge Monitoring Report (DMR) was completed in the month of February. There were no violations. The DMR was electronically filed utilizing the NetDMR reporting tool.

The Davis Campus wash water was sampled for coliform/bacteria in February. There was no evidence of coliform. Science was once again advised that if science occupancy exceeds 28 people at the Davis, a drinking water permit will be required.

Air

Data continues to be collected for stationary internal combustion engines.

Solid Waste

Recyclables (paper, cardboard, metals, plastic, batteries, light bulbs, electronic components, petroleum products, and batteries) continue to be collected in conformance with Sanford Lab's Sustainability Plan.

Various wastes were received, characterized, packaged accordingly for disposal (Gadolinium Chloride, MagnaFlux products, lead waste, Aluminum Sulfate, liquid polymer, liquid Ethyl Mercaptan, etc.)

Long-Baseline Neutrino Facility / Deep Underground Neutrino Experiment (LBNF/DUNE)

The Technical Revision maps to Open Cut Permit Nos. 332 and 456 were prepared in anticipation of LBNF/DUNE waste rock disposal.

Preliminary slides for Environmental Training to be presented in April are being prepared. The training will include an overview and requirements for Historic Preservation.

Environmental Support Tasks

A Standard Operating Procedure (SOP) was prepared for movement of hazardous materials on the surface.

Various meetings were attended to support safety, operations, and planning. New chemical Safety Data Sheets (SDS) were examined for new safety hazards and hazardous waste tracking.

Various underground levels including the 2000L and 1100L were walked to provide quality assurance to draft Emergency Evacuation Maps.

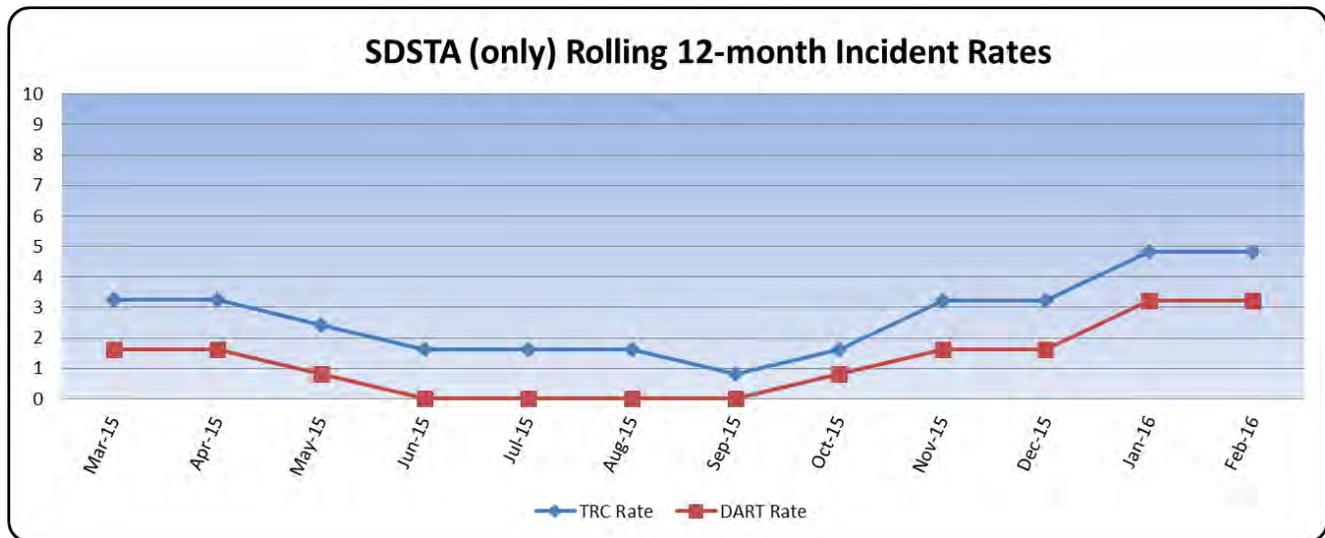
Emergency Scenario Maps are being prepared for the Ross Campus to coincide with emergency scenarios that could be expected. This will be part of the guide training for the Ross Campus.

The revised emergency response procedure and associated maps was introduced for comment to ESH and others in anticipation of its March release.

SDSTA engineers and ESH reviewed and commented on the required Storm Water Pollution Prevention Plan as part of the bid process for the pending Sanford Lab parking lot and sidewalk repair requires. An Emergency Response Plan map and map evacuation routes were prepared for the Sanford Lab Homestake Visitors Center and will be posted at several locations within the building.

Work continues toward ISO 14001 compliance. A meeting was held with Kathy Carney (Oak Ridge National Laboratory) and it was suggested that Sanford Lab move first towards ISO 18001 compliance considering the importance of safety and safety quality assurance. In the meantime, Environmental Aspects and associated impacts are being drafted to meet one of the requirements of either ISO 14001 or ISO 18001.

Health and Safety Summary



TRC = more than first aid treatment was given.

DART = more than first aid treatment was given AND restrictions were job limiting or the employee could not work. (Subset of a TRC)

February 2016 DARTS/TRC:

- No events to report

February 2016 First Aid Cases:

- No events to report

February 2016 Category 1 or 2 Events:

- No events to report

February 2016 Category 3 Events:

- No events to report

February 2016 Items of Interest:

1. Hosted John Anderson (Fermilab) on inspection of CASPAR accelerator
2. Finished air door on 4850L; completed by Underground Rescue Team in preparation for Blast Vibration tests
3. Approved two ESH personnel for Underground Guide Status
4. Finalized 2015 OSHA Form 300A; signed by Lab Director; posted on 1st floor bulletin board
5. Completed quarterly W-65 weighs
6. Submitted information to SD State Historical Preservation Office on Underground Maintenance Crew pipe conveyor design
7. Placed additional signage on property regarding access control and Personal Protective Equipment (PPE)
8. Helped perform stream flows monitoring for Whole Effluent Toxicity (WET) Test
9. Attended the monthly Safety Committee Meeting
10. Conducted new hire training for Infrastructure Technicians; provided PPE
11. Installed dehumidifier in air lock of 4850L refuge chamber; All refuge chambers are fully stocked and functional; Refuge chamber filters delivered on 1700L and 2400L
12. Conducted inventory of 2600L powder and cap magazine

13. All refuge barrels checked ~ one bad (cracked case) OXY-K removed. All others checked good as well as food and water in each
14. Performed biology sampling at the Ross Steam Tunnel
15. Conducted monthly random drug testing
16. Provided Annual Refresher Training for Operations Personnel on PPE
17. Started interview process for ESH Technical Support Lead
18. Provided underground site specific training for contractors onsite

Science Department

Jaret Heise, Science Director

Work on a number of safety systems took place in February. Early in the month, the service contractor performed maintenance on the Davis Campus alarm system and repaired some issues. Occupancy certificates were issued for the CASPAR and BHUC laboratories following commissioning of the fire suppression system for the Ross Campus. However, during the commissioning process, some water was released into the CASPAR laboratory space that was later cleaned up. Oxygen monitoring hardware at the Ross Campus was swapped out to align with standard equipment installed at other laboratories, both on the surface and underground. An additional oxygen sensor was also installed inside the BHUC cleanroom. In all cases, the sensors were configured to alarm according to the Sanford Lab oxygen deficiency policy and tested with calibration gas to confirm proper operation. A short outage of the three transfer fans at the Ross Campus was likely related to the oxygen sensor work.

Blasting for the Phase 2 LBNF test exercise is scheduled to begin March 8, including a preparation (trim) blast followed by two design test blasts. A temporary wooden bulkhead has been constructed in the Trolley Drift to better isolate laboratories at the Ross Campus from expected over-pressure conditions, and Science Department personnel are planning dedicated laboratory inspections after the blasts take place.

Two brief power outages affected underground laboratories in February. A brownout related to electrical work in the Yates Hoistroom affected the Davis Campus, while work in the Ross Shaft appears to have caused a brief power blip at the Ross Campus.

Groups with lead both in use underground and in storage on the surface ensured their respective chemical inventories were up-to-date. Approximately 144 metric tonnes of lead (mostly in the form of ~11,940 bricks) is currently on the property.

Similar to the protection afforded at the Davis Campus, UPS units were installed at the Ross Campus to provide battery backup for the network switches that provide connectivity for both data and phones.

While some maintenance work was performed, more work is required to address issues with several rail switches along standard haulage routes that serve laboratories on the 4850L. Two derailments were reported in February.

Research Scientist Markus Horn joined the Science Department in February. He brings a strong hardware and laboratory background to the position.

Regular Davis Campus evacuation drills/discussions were conducted in February, including a discussion of low-oxygen scenarios. In terms of safety equipment, a number of fire extinguishers were mounted in February and two additional phones were installed. Scheduled checks of safety equipment were performed, including the self-contained self-rescuers units stored near areas where liquid nitrogen is used at both the Ross and Davis Campuses.

Large Underground Xenon—LUX

LUX continues to be in a stable data-taking mode, and by the end of February the experiment had accumulated approximately 258 live days of data (or ~86%) with a goal of reaching 300 live days for this run. The end of data-taking is currently projected to be in May. Discussions of the final calibrations continue, including additional characterization and use of the neutron generator and additional calibration sources that can be introduced into the detector volume. Detailed discussions will continue at SURF in early March. Decommissioning is expected to be complete by February 2017 to support the LZ schedule.

In February, there was a short interruption to xenon circulation when the pump alarm system was accidentally activated during training. There was essentially no impact to data quality since the xenon purity remained very high, above 2600 microseconds (electron lifetime). The LUX onsite crew also requested emergency underground access to restore settings on the pump cover gas that were not properly reset after troubleshooting.

February was a significant month for LUX calibrations. The month started with quarterly tritium calibrations. The neutron generator was upgraded with hardware from the manufacturer to allow it to run in a short-pulse mode. While some time was taken to refine running parameters following the upgrade (including some unscheduled underground access), data were collected as scheduled. A commissioning summary for the modified neutron generator is expected shortly that will be shared with the Sanford Lab Radiation Contamination Sub-committee. There was a minor issue when an incomplete setup of administrative controls for changing the neutron generator electrical module was not removed after work completed. In addition to the standard calibrations, light seals for the water tank were also performed.

Another LUX paper has been recently published: “First spin-dependent WIMP-nucleon cross section limits from the LUX experiment”, which is available online at <http://arxiv.org/abs/1602.03489>.

LUX reported that the liquid nitrogen tanker delivered by SDSTA personnel was not connected to the storage tank system, and the oversight was quickly resolved.

Training in February focused on the following systems: liquid nitrogen, thermosyphon, tritium and the pump alarm system (as noted above). Several LUX researchers participated in facility guide training.

In February, some additional personnel were onsite to support the neutron generator activities; the average LUX crew consisted of approximately five people for a combined total of 491 hours.

MAJORANA DEMONSTRATOR—MJD

Significant effort on Module 2 continued through February, including preparation and assembly of detector strings and installation of the crossarm shielding and thermosyphon. The small leak in the Module 2 cryostat was fixed in February. By the end of the month, all strings had been assembled for Module 2, comprising 14 detectors (12.8 kg) made from enriched germanium and 15 detectors (9.4 kg) made from natural germanium (total detector mass = 22.2 kg). This is an important milestone for the project! Strings are expected to be installed inside the cryostat in April to mark the start of commissioning, with a goal of having Module 2 in the main shield by this summer. With the current configuration, the total detector mass representing both modules is 29.6 kg ^{enr}Ge and 15.1 kg ^{nat}Ge for a total detector mass of 44.7 kg.

Commissioning with Module 1 (total detector mass = 22.5 kg) in the main shield continued through February, including collecting background data and further improvements to the calibration system. On the order of ~1.8 kg-years of data have been collected since the start of commissioning in the fall. High voltage stability studies continue on some problematic detectors; currently 18 out of 29 detectors in Module 1 are operating. A leak has been identified in the Module 1 cryostat gasket that will require removal from the shield at some point in the future. The offline detectors could be serviced at the same time as the cryostat gasket work.

Machine Shop activity at the Davis Campus is expected to wind down substantially over the next month.

MJD published their first paper involving data collected at Sanford Lab: “Muon Flux Measurements at the Davis Campus of the Sanford Underground Research Facility with the MAJORANA DEMONSTRATOR Veto System”, which is available at <http://arxiv.org/abs/1602.07742>.

Oak Ridge National Laboratory (ORNL) personnel were onsite in February to perform a regular walk-through inspection. Plans continue to advance for the upcoming Operational Readiness Review required by Sanford Lab that is expected to draw on ORNL expertise, including an operations risk specialist. With dates for the Department of Energy (DOE) MJD Annual Review set for mid-June, the Operational Readiness Review will likely take place in July. Sanford Lab has provided some guidance based on similar operations reviews for other projects. The DOE CD-4 review for MJD is still scheduled for the fall.

MAJORANA’s effort for February consisted of an average crew of about eight people combining for a total of 1417 hours for the month. MJD held their collaboration meeting at Sanford Lab in late February.

Compact Accelerator System for Performing Astrophysical Research—CASPAR

Beamline assembly and component wiring continued through February. Another member of the CASPAR Safety Readiness Review Committee visited Sanford Lab in February to both review the CASPAR progress as well as the LUX neutron generator. Comments have been received from the Committee on the draft update to the Sanford Lab Radiation Safety policy that includes radiation-producing machines. The accelerator tank will be inspected in March.

Black Hills State University (BHSU) Underground Campus—BHUC

Cleanliness protocols for the BHUC laboratory continue to evolve, with dedicated clean PPE starting to be used on a regular basis in February. Commissioning of the liquid nitrogen system also continues. Interest in BHUC space continues to be strong in discussions with USD (nEXO) and UNC (MJD/KURF) personnel. A funding proposal was submitted to the South Dakota Board of Regents at the end of February, including participation from BHSU, SDSM&T, USD and SDSU personnel; among other requests, the proposal seeks increase the underground campus cleanroom space by ~33%.

BHUC Physics Users: The BLBF group continued to operate two low-background counters in February, with one counter assaying production samples while maintenance was performed on the second system to improve the shield nitrogen purge. Approximately 40,000 kg of lead was received from the Soudan Underground Lab in early February. The majority of the lead will remain in storage on the surface, and once a shield design is approved for the SOLO detector, a portion of the lead will be transported to the BHUC cleanroom; some of the lead will also be used to support future screeners for LZ. The schedule for manufacturer upgrades for the CUBED low-background detector remains uncertain.

LUX-ZEPLIN—LZ

Two important LZ reviews were held at SURF in early March, including the onsite assembly and installation preliminary design as well as the 95% final design review of SURF infrastructure improvements (both surface and underground). The contract is now in place for about 1.2 million liters of xenon at fixed price to be procured by SDSTA and LBNL (Project funding). Another 100,000 liters of Xe procured last year is currently in transit from China to SLAC. The LZ Director's Review was held February 9-11 followed by the DOE CD-2/3b Independent Project Review (IPR) scheduled for April 26-28, both at LBNL.

Other Current Research Activities

Physics: Initial discussions were held with researchers affiliated with Fermilab who have expressed interest in exploring options for an atom interferometry experiment at Sanford Lab.

Logistics are still being worked out regarding the shipment of equipment from the CDMS dark matter experiment at Soudan. Ten crates of SOLO lead bricks are also still at Soudan.

Representatives from the Deep Underground Gravity Lab (DUGL) group are planning a trip for mid-April. The team will download data saved locally at each station and perform some hardware replacements. Initial discussions have also been held regarding decommissioning, which is expected to begin this fall for some of the surface instruments. Recall that the DUGL seismometers are on loan from a federal pool and are due to be returned by the end of 2016.

Geology: Representatives from the Permeability (k) and Induced Seismicity Management for Energy Technologies (kISMET) project have settled on a contractor to drill 5 holes on the 4850L this spring. Input from SURF was provided on the contract bidders. A site visit is being planned for late March. Meanwhile, SDSTA personnel continue to interact with LBNL contacts on a sub-contract for site preparation work and support documentation.

Transparent Earth researchers were onsite in February to finalize documentation for an upcoming rock stability publication, including a mineralized zone in West Drift. As well, an inspection of the kISMET site nearby was also made on behalf of that project, indicating the SURF rock bolting progress in the area was well advanced.

Discussions continue with members of the Rock Melt project, which is aiming to drill between the 1550L and 1700L starting in the summer.

Biology: Planning refinements continue for the microbial observatory for the long-term study of the subsurface microbial community using legacy drill holes proposed by the NASA Astrobiology Institute research group. Based on Sanford Lab input, the most practical sites to develop initially include holes on the 2000L, 4850L and 4100L. A modest amount of work will be performed by SDSTA personnel, which could begin by May.

BHSU researchers are renewing efforts to characterize biodiversity in the underground environment, including a new proposal to isolate fungi in extreme environments. The work could begin this spring.

Engineering: Xilinx chip testing continued at the 4850L near the Davis Campus. An upgraded computer was delivered to Sanford Lab and will be set up in early March.



Fig. 1 CASPAR inspection including FNAT.



Fig. 2 Evolving cleanliness at RHIC.

Education and Outreach Department

June Apaza, Director of Education and Outreach
KC Russell, Cultural and Diversity Coordinator

Cultural Activities

The Cultural Advisory Committee met on February 17 for their annual review. The committee heard presentations from Cultural and Diversity Coordinator KC Russell and Education and Outreach (E&O) from E&O Director June Apaza. Communications Director Constance Walter Laboratory Director Walter Weinig also provided updates on their respective departments and the lab. The committee made a number of recommendations which are now under review by management.

Curriculum Unit Pilots

Piloting of curriculum units continues with most of the units in circulation in February. At the elementary level, units are at Timber Lake, Piedmont and Takini. At the middle school level, a unit is starting at Mobridge. At the high school level, the *Starstuff* unit is at Aberdeen Central, and *Perplexing Puddles* is soon to start at Sioux Falls O’Gorman.

E&O Deputy Director Peggy Norris attended the South Dakota Science Teachers Association annual conference February 4-6 and gave two workshops; one focusing on the middle school units and one on the high school units. There were several teachers interested in piloting units this spring and more interested in taking the teacher training this summer.

So far, over 40 registrations have been received for the summer teacher professional development workshops on the six units. Workshops for all three grade bands will take place concurrently June 27 – July 1 on the Black Hills State University (BHSU) campus. More information can be found at <http://www.sanfordlab.org/education/integrating-sanford-lab-science-workshop>.

Classroom presentations

E&O staff continued to travel to schools across the state to deliver presentations to classrooms. See Table 1 for a list of the ten schools and the grade levels of the 1,479 students who learned about the Sanford Underground Research Facility through these visits.

The E&O Department is preparing a video about the E&O program to show at the grand opening of the Sanford Science Education Center. The BHSU Communications Department filmed some of the assembly presentations at Vandenberg Elementary for the video.

Videoconferences

The E&O group worked with a teacher in Florida to present a three-day unit on dark matter to two classes of gifted eighth grade students. Forty students participated. The students first watched the *Science Friday* video about the Large Underground Xenon experiment. They then performed hands-on activity about indirect evidence associated with dark matter searches. Finally, they had a Skype™ conference to SDSTA Experiment Support Scientist Mark Hanhardt and Peggy, who were underground in the Davis Campus. Peggy gave the students a summary talk about evidence for dark matter and then acted as videographer as Mark gave a tour of the experiment and answered questions from the students. The event went very well and was well received by the students in Florida.

Field Trips to Sanford Lab

No field trips were scheduled in January. The spring dates are filling up fast.

Other

The E&O team presented the February ‘Deep Talks’ at the Sanford Lab Homestake Visitor Center on February 11. Sixty-one people attended, including local community members, Sanford Lab staff members and members of the science collaborations. Participants ‘channeled their inner fifth graders’ to do activities related to indirect evidence and dark matter. The activities were samples from the *Exploring the Unseen* elementary curriculum unit.

Undergraduate

Interviews have been completed for the Dave Bozied and Chris Bauer internships. Final selections will be complete the first week of March.

Interviews have also been completed for the Davis-Bahcall Scholars program. Drew Alton (Augustana), June, Brianna Mount (BHSU), Peggy and Ben Sayler did the initial review of the applications, and Drew, Brianna, Peggy and Ben conducted interviews of nineteen finalists. Final decisions will be made the first week of March.

Other Activities

Inverness Research completed a set of reports associated with the final summative evaluation for the 5-year National Science Foundation (NSF) Planning grant for E&O. These two reports highlight difference facets of the Sanford Science Education Center (SSEC). The first report highlights accomplishments of the SSEC and the return on NSF's investment of the planning grant funds. The second report identifies design challenges faced by the SSEC and shares lessons learned from trying to meet those design challenges.

A link can be found to the reports at <http://inverness-research.org/2016/02/25/sanford-science-ed-center-reports/>.

Table 1. Classroom / Assembly presentations – February 2016

Presentation	School	Grade(s)	# of presentations	Total # students	Presenter
Day in the Life	Pinedale (RC)	K	3	67	Lynn Arnold
Day in the Life	Stevens High (RC)	9-12	1	9	Lynn Arnold
STEM Careers	Chamberlain	8	4	53	John McEnelly
Searching for WIMPs	Vandenberg (RC)	4-5	10	257	Julie Dahl
Neutrinos	Mitchell	9	6	157	John McEnelly
Searching for WIMPs	Pinedale (RC)	5	3	75	Lynn Arnold
Day in the Life	Vandenberg (RC)	4-5	11	301	Julie Dahl
STEM Careers	Kadoka	6-11	4	102	Julie Dahl
Day in the Life	Long Valley	K-3	1	19	Julie Dahl
Searching for WIMPs	Long Valley	4-8	1	26	Julie Dahl
Neutrinos	Arlington	9-12	4	64	John McEnelly
STEM Careers	Arlington	6-8	3	55	John McEnelly
Day in the Life	Midland	K-3	1	19	Julie Dahl
Searching for WIMPs	Midland	4-8	1	9	Julie Dahl
Day in the Life	Kadoka	K-3	1	49	Julie Dahl
Searching for WIMPs	Kadoka	4-8	1	49	Julie Dahl
Day in the Life	Interior	K-3	1	26	Julie Dahl
Searching for WIMPs	Interior	4-8	1	26	Julie Dahl
Day in the Life	Arlington	K-5	4	116	Peggy Norris
TOTAL	10 schools		61 presentations	1,479 students	

Table 2. Estimated Audience Served – February 2016

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											
<i>Subtotal</i>	0	0	0	0	0	0	0	0	0	0	0
CURRICULUM UNITS											
<i>Pilot curriculum units are in progress</i>											
<i>Subtotal</i>	0	0	0	0	0	0	0	0	0	0	0
ASSEMBLY PROGRAMS											
Assembly Programs – 12 schools (Table 1)	979	219	281								
<i>Subtotal</i>	979	219	281	0	0	0	0	0	0	0	0
VIDEOCONFERENCES											
Santa Rosa, FL		40				1					
<i>Subtotal</i>	0	40	0	0	0	1	0	0	0	0	0
OTHER K-12											
Sturgis Career Fair			40								
Science Fairs (x2)		40									
SD Science Teachers Association						30					
<i>Subtotal</i>	0	40	40	0	0	30	0	0	0	0	0
OTHER											
Deep Talks Presentation										10	51
<i>Subtotal</i>	0	0	0	0	0	0	0	0	0	0	0
Grand Total	979	259	321	0	0	31	0	0	0	10	51
<i>Grand Total: 1,651 students, educators and members of the general public.</i>											

Communications Department

Constance Walter, Communications Director

Communications Plan

SDSTA Creative Services Developer Matt Kapust and Communications Director Connie Walter attended a social media training session to develop a workflow to schedule and post content to social media. Matt created shared calendars and notebooks to assist with the social media workflow.

Matt developed draft templates for word documents, letterheads, memos and updated the business card template to make it more user friendly.

Connie is participating in Facility Master Plan (FMP) discussions and working with staff members and Dangermond/Keene to update the FMP document.

Connie and Administrative Services Manager Mandy developed an identity standards procedure for the new Style Guide.

Connie and Matt are working on designing displays that can be used at conferences, festivals and other public events. The displays could be used by all departments at Sanford Lab.

Connie attended the Cultural Advisory Committee meeting as well as the strategic planning session for the Sanford Science Education Center at Black Hills State University.

Community Outreach

Matt and Connie are designing and installing an exhibit at the Black Hills Mining Museum in Lead. SDSTA Infrastructure Technician Dan James finished a display of the Ross Shaft steel. Communications is working on signage and display information about the artifacts in the display.

Connie and Matt are working with the Sanford Lab Homestake Visitor Center, Education and Outreach, Sanford Lab staff and community groups to develop educational programming and outreach events. So far, three Deep Talks events have been held and the first Pi Day is March 14. The third Deep Talks presentation was held on Feb 11 with more than 60 people in attendance.

Connie was interviewed for an article about Neutrino Day that will run in the Lead Magazine.

As a member of the Deadwood Lead Economic Development Corporation Board, Connie participated in strategic planning for the organization.

Graphics, video and website

Matt is performing routine maintenance on the Sanford Lab website.

Matt worked with the Environment, Safety and Health (ESH) Department to update an infographic flow chart explaining what to do in case of an emergency.

Matt is researching new options to host and develop a redesign of the Sanford Lab website. An initial meeting with Acquia, a web hosting company, took place in February. A set of hosting and support requirements are being created.

Connie and Matt developed a draft informational brochure about Sanford Lab. The brochure is intended for the general public and can be given out at conferences, festivals and at the Sanford Lab Homestake Visitor Center.

Photography highlights in February

- Feb. 11: Deep Talks with Education and Outreach
- Feb. 19: McElroy farewell

To view albums in the Sanford Lab Photo Gallery go to: <http://pics.sanfordlab.org/f216003594>

Miscellaneous

Matt continues to maintain cameras and manage files to create time-lapse videos of Black Hills State University Underground Campus (BHUC) and Compact Accelerator System for Performing Astrophysical Research (CASPAR).

The Communications Department continues to develop stories for Deep Thoughts; update the website; perform general web maintenance; and provide photographs and information to the media, science collaborations and educational institutions, and other laboratory departments.

Two summer communications interns were interviewed and an offer was made to one of them.

Matt will work with SDSTA Geotechnical Engineer David Vardiman on video documentation of the blast vibration study in March.

Upcoming

- Deep Talks: The MAJORANA DEMONSTRATOR. Vince Guisepppe and Cabot-Ann Christofferson (March 10)
- Pi Day (March 14)
- Lead Chamber filming underground for promotional video (March 18)
- Attorney General's office underground visit (March 21)
- SDSM&T University Advisory Board underground visit (April 18)
- Dakota State University underground visit (end of April)
- DUNE underground visits (May 18 and May 23)
- Planning/fundraising for Neutrino Day (July 8-9)

News coverage

- Feb. 29: [Majorana wins big with 'second string'](#) by Constance Walter, Science Springs
- Feb. 26: [EDUCATION: Learning Opportunities for All Ages](#) by Tom Jackson Jr., Prairie Business
- Feb. 16: [Test of DUNE tech begins](#) by Lauren Biron, Symmetry Magazine
- Feb. 15: [A whole new way to see the universe](#) by Constance Walter, Black Hills Pioneer
- Feb. 15: [No longer blind: Why that gravitational wave discovery is so heavy](#) by Calla Cofield, Christian Science Monitor
- Feb. 15: [Gravitational waves: breakthrough discovery after a century of expectation](#) by Tim Radford, The Guardian
- Feb. 13: [UT Arlington helping with \\$1 billion project to study ghostly particles](#) by Patrick M. Walker, Fort Worth Star Telegram
- Feb. 13: [Work winding down on 2 big experiments in Soudan mine](#) by Lisa Kaczke, Duluth News Tribune
- Feb. 11: [LIGO sees gravitational waves](#) by Lauren Biron, Symmetry Magazine
- Feb. 09: [Neutrinos on a seesaw](#) by Matthew R. Francis, Symmetry Magazine
- Feb. 08: [Three Ways to Bust Ghostly Dark Matter](#) by Communications Office, SLAC National Accelerator Lab
- Feb. 01: [Last Call: Will WIMPs Show Their Faces in the Latest Dark Matter Experiment](#) by Clara MosKowitz, Scientific American



Top: A visitor studies the mine model exhibit at the Sanford Lab Homestake Visitor Center.

Center: Adults (left) and children (right) both participated in the Deep Talks event at the Visitor Center. The event, which was conducted by the Education and Outreach Department, had participants put their observations skills to the test with an activity designed for middle school students.

Right: LUX-ZEPLIN (LZ) collaboration members pose for a group photo during a meeting break.



Business Services Office
Sharon Hemmingson, Business Services Manager

Contracts

Sanford Underground Research Facilities Operations—Lawrence Berkeley National Laboratory (LBNL): SDSTA received Modification No. 38 to Subcontract No. 6994297, allocating an additional \$3,636,000 for Sanford Underground Research Facility Operations.

Two interim funding requests were submitted to address deferred maintenance on motor-generator (M-G) sets in the Yates cage and ore hoists. The requests total \$1,426,248. An additional interim funding request is in process for the purchase of water inflow project materials.

Ross Shaft Refurbishment—LBNL: SDSTA received Modification No. 1 to subcontract No. 7262800, adding funding in the amount of \$3,800,000.

LUX: SDSTA received Modification 16 to subcontract 6973786, adding \$50,000 in incremental funding.

LUX-ZEPLIN (LZ)—LBNL: SDSTA is awaiting a formal contract. A letter subcontract has authorized initial work.

Long-Baseline Neutrino Facility (LBNF)—Fermilab:

Excavation: A change request for revisions to the blast vibration study was approved with PO revision.

Professional Staff Services: A Purchase Order (PO) revision was received to authorize changes to the blast vibration study.

kISMET (LBNL): A subcontract from LBNL is in process for SDSTA’s role in preparing for the kISMET project.

Rock Melt—RESPEC: A subcontract from RESPEC is in process for SDSTA’s role in preparing for this project.

NAI Biology: A new subcontract from Northwestern University is planned as a result of NASA funding.

The Contracts Specialist position has been advertised and interviews are underway.

Request For Proposals (RFPs) and Contracts Status Report – FEBRUARY 2016			
Contractor / Vendor	Type	Project	Amount
Arup #2013-01	TO#4R1 1	Authorizes changes to the blast vibration study	\$0
True Clean Carpet and Janitorial #2014-11	CO#6	Remove Admin & E&O building scope, add funds for remainder of contracted space	\$50,000
Wayne Eaton Construction	Contract pending	Water Inflow Pipe Fusion	\$144,286
TBD	RFB	Admin & Foundry Reroofing	
TBD	RFB	Parking Lot and Sidewalk Improvements	

Procurement

Purchase Orders (POs): 171 POs were issued in February totaling **\$424,734.69**.

Warehouse Inventory: Warehouse inventory on February 29th, 2016 totaled **\$216,019.16**.

Information Technology (IT) Office
Deb Meyer, IT Manager

Projects

A new visitor log custom application (database) was completed to replace the existing Jolly Lobby Track software.

The IT Blog posted two new informational blogs in February.

New VOIP phones were requisitioned to replace broken copper phones at the underground stations.

Network Administrator Mike Rechtenbaugh was onsite in February to perform various upgrades and fiber failover testing.

The Education and Outreach Classroom audio system install is on hold pending delivery of the flat panel TV.

A phone system upgrade path has been determined and scheduled for May.

Daily

IT continues to monitor and review wireless and general network activity and counts, network hardware readiness, VPN Remote Access logs, and establishes new VPN and DocuShare accounts for individuals and user groups, as requested.



Daily Activities (measured in Work Orders)
February 29, 2016

Administrative Services Office

Mandy Knight, Administrative Services Manager

For the month of February and early March, logistical and administrative support were provided for the following:

- Feb 4-5: Facilities Master Plan Meeting (*Weinig*)
- Feb 9: Yates Change Review Board Meeting (*McElroy*)
- Feb 11: Deep Talks (*3 of 6 in series, Visitor Center*)
- Feb 11, 12 & 19: Annual Refresher Training—Personal Protective Equipment (*Hudson*)
- Feb 12: Sanford Lab ‘After The Holidays’ Party (*The Lodge at Deadwood*)
- Feb 17: Cultural Advisory Committee Annual Meeting (*KC Russell*)
- Feb 24: Safety Committee Meeting
- Feb 26-29: MJD Collaboration Meeting
- Mar 1: LZ WBS 1.9 Assembly and Integration Preliminary Design Review (*Gilchriese*)
- Mar 2-3: LZ Infrastructure Final Design Review (*Gilchriese*)
- Mar 4: Robotics Competition, Underground and Surface Participants (*Mount/Norris*)

Preparation and planning continue for upcoming meetings at Sanford Lab:

- Mar 7-8: Sanford Lab Mandatory Open Enrollment Benefits Meeting (*Brosnahan*)
- Mar 10: Deep Talks (*4 of 6 in series, Visitor Center*)
- Mar 17: SDSTA Board of Directors Meeting (*Headley*); Hazwoper Training (*Scheetz*)
- Mar 21: SD Attorney General Marty Jackley Visit and Underground Tour
- Mar 30: Safety Committee Meeting
- Apr 8: Sanford Lab All Hands Meeting
- Apr 14: Deep Talks (*5 of 6 in series, Visitor Center*)
- Apr 14, 15 & 22: Annual Refresher Training—Environmental
- Apr 18: SDSM&T University Advisory Board Meeting; *Underground Tour (Headley)*
- May 9: Sanford Science Education Center and BHUC Grand Opening (*to be held at BHSU*)
- May 12: Deep Talks (*6 of 6 in series, Visitor Center*)
- May 18: Resource Review Board Meeting (LBNF/DUNE); *Underground Tour (Headley/Weinig)*
- May 18 & 23: DUNE Collaboration Members Underground Tours (*May 19-22: DUNE Collaboration Meeting hosted by SDSM&T*)
- July 8-9: Neutrino Day

Laboratory Receptionist Brooke Anderson continues to assist SDSTA Underground Foreman Jack Stratton—to update the Water Inflow Charts and Timber Inspection database and Waste Water Treatment Plant (WWTP) Foreman Ken Noren—to update the WWTP digital screen.

Monthly Researcher hours were tracked and Science training records processed. Monthly invoices were coded for the Finance Department. Safety messages and other important news continue to be updated on a daily basis on digital displays throughout the facility.

The SDSTA Jolly Lobby Track management software that electronically captures information at check-in has been unreliable in the last several months. Senior Systems Administrator Dave Turner has created a Visitor Log Database to track daily visitors. This has replaced the Lobby Track system and is providing a more efficient check-in process. Also, the monthly report that was generated manually is now automated and will be sent the SD Fusion Center/Homeland Security each month.

Related to the Visitor Log Database, ESH Director Noel Schroeder, HR Administrator Eileen Brosnahan, Security Guard Chad Knight and Mandy participated in a visitor badging meeting. A representative from Blackboard, specializing in badging and door access/security, summarized their services and benefits of replacing our antiquated proxy locks. In March, the Security team will provide Blackboard representatives a surface and underground tour so they can finalize a quote based on our immediate needs. Blackboard is used among educational institutions throughout South Dakota and Noel is verifying

with the SD Board of Regents if SDSTA could share the West River master server (Black Hills State University); a beneficial low-cost option.

DocuShare collections continue to be organized and archived as needed. Mandy continues to assist the Communications Department with copyediting and updating content on the Sanford Laboratory website, as needed. Organization charts and telephone lists were updated and distributed to the project team. Monthly reports for LBNL and SDSTA were compiled, edited and distributed. The Boards and Commissions portal was updated. A few SDSTA policies and procedures were either updated and newly created. They will be submitted to the board for approval at the March 17 meeting.

Finance and Human Resources Department
Nancy Geary, Chief Financial Officer and Department Manager

Included in the Financial Report are the following:

- DOE SDSTA FY2016 SPA Curve as of February 2016
- Balance Sheet as of February 29, 2016
- Comprehensive Statement of Income February 2016
- Comparative Balance Sheet – February 2016 vs. February 2015
- Comparative Statement of Income – February 2016 vs. February 2015
- Available Cash as of February 2016
- Operating Budget Summary
- CAPEX Budget Summary
- February 2016 and YTD CAPEX Budget – actual vs. budget
- SDSTA Staffing Plan by Funding Source as of February 2016

Department of Energy (DOE) SDSTA FY2016 Scheduled Performed Actual (SPA) Curve

This graph represents an analysis of the DOE Subcontract No. 6994297 Operations scheduled funding compared to actual. The report shows funding through September 2016 along with information related to Funded-to-Date dollars, Scheduled dollars, Performed dollars and Actual dollars by month. Actual dollars represent actual invoices for the months sent to Lawrence Berkeley National Laboratory (LBNL) for reimbursement. For February, the invoices totaled \$1,239,237, which is lower than the anticipated reimbursements of \$1,278,343 by \$39,106. Since the inception of this subcontract in February 2012, the actual expenses are at \$55,183,976 which is lower than the budget of \$55,424,227 by \$240,251.

Balance Sheet Items

Cash in Local Checking—Total on hand at February 29, 2016 was \$1,577,934; up from last month by \$426,485. Funds on hand were necessary to pay employee medical/life/vision insurance all due March 1, 2016. The high balance also contains funds received from federal contracts late in the month on open accounts receivable.

Cash with State Treasurer—Total balance of \$14,747,938. This has decreased from last month by \$732,173 as this amount was drawn down during February.

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 \$2,004,610; up from last month by \$356,193. Included in the balance are open invoices to LBNL for \$1,525,970; representing invoices for the Large Underground Xenon (LUX) subcontract, LUX-ZEPLIN (LZ) engineering support, the Ross Shaft Rehabilitation work and invoices for the Operations subcontract No. 6994297. Additional open invoices include \$423,467 from Fermilab, \$18,162 from small university subcontracts, as well as open invoices from Barrick equaling \$36,385. Additionally, there are open invoices for \$626 from Xilinx, Inc., the commercial organization that has established an experiment located near the 4850L Davis Campus.

Unbilled A/R—Balance of \$512,898. Unbilled A/R represents items that have not been billed on various contracts. The payroll from pay end date February 26, 2016 (paid to employees on March 4, 2016) was not invoiced in February on various contracts. This amount will be invoiced in March. February's balance has increased by \$16,656.

Other A/R—Current balance of \$123,097. This balance represents any Interest Receivable and Miscellaneous Accounts Receivable. The balance increased by \$9,217 which represents the interest accrual for the month.

Inventory/Supplies—Balance at \$2,521,607 for fixed assets being stored but not in service. The balance is unchanged from January.

Inventory Warehouse/Personal Protective Equipment (PPE)—Current balance of \$368,922. This balance represents the warehouse inventory that was purchased by SDSTA prior to federal funding and xenon gas inventory for experiment use. This balance has decreased by \$60 for inventory usage during February.

Other Current Assets—This listing on the balance sheet represents the balances of both prepaid insurance – \$254,631 and prepaid other – \$38,146. Total balance of \$292,777 is up from last month by \$34,770. This increase

represents an additional installment for the captive insurance which extends coverage through June 30, 2016 along with the monthly insurance expenses and additional changes in prepaid items for February.

Fixed Assets—Total of \$86,069,843 (net of depreciation through February 29, 2016). Fixed assets decreased in February by \$154,310. This decrease represents the month's depreciation along with retiring 2-125HP Root Blowers that are no longer in working condition or needed.

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. Current balance has increased by \$211,726 to 4,328,648. The balance represents the current year's project costs (not including personnel) funded by these sources.

Capital Lease—This balance of 404,065 represents the deep pump system capital lease. The balance has decreased by \$14,854. The lease through AmWest, Inc. was renegotiated to include transference of property to us 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) Nos. 68 and 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 Net Pension Asset is a restricted asset. Thus the equity created would also be restricted (restricted for pension benefits). The balance shown as a noncurrent asset is \$7,176,478 created by fiscal year 2015 final entries.

Investment in Captive Insurance—This account classification reflects the transfer of funds from our Cash held with the State (Indemnification Fund) to the Captive Insurance Company. The balance of \$2,500,000 was authorized by House Bill (HB) No. 1186 from the 2015 Legislative Session.

Total Assets—Total of \$122,628,816. This balance is up from last month by \$153,651; which represents the net activity as listed above.

Accounts Payable—Our Accounts Payable balance of \$1,305,631 (including Accounts Payable and Accounts Payable Accrual) at the end of the month compared to last month has increased slightly by \$288,702. This increase is primarily due to an increase in the amount owed to Arup for LBNF services and for the purchase of a John Deere loader from RDO Equipment Company on DOE funds.

Accrued Payroll Liabilities—Current balance of \$1,200,839 has increased slightly by \$59,451 from last month. This represents the net change between earned vacation and vacation taken and other changes in other employee benefit related liabilities. This month's accrual also includes the employee benefits related to the labor accrual for labor performed in February, but not paid to employees until March.

Long Term Accrued Employee Benefit/Lease—This balance of \$404,065 denotes the liability associated with the capital lease for the deep pump system from AmWest, Inc. This balance has decreased by \$14,854 for the months' reduction in the lease amount owed.

Long Term Xenon Notes Payable—This designation represents the \$2M of funding received from the South Dakota Community Foundation (SDCF) for the purpose of purchasing xenon for experiment use at Sanford Lab. Our first purchase of 100,000 liters of xenon was received in early November.

Pension Deferred Inflows—This classification reflects the requirements of GASB Nos. 68 and 71, as discussed earlier. The balance of \$4,412,373 represents the net difference between projected and actual investment earnings on our pension plan with the South Dakota Retirement System.

Total Liabilities—Total Liabilities increased by \$333,299 (from \$8,989,609 to \$9,322,908), which reflects the net activity listed above.

Total Equity—Decrease to \$113,305,908 from the previous month \$113,485,557. Included is an additional Restricted Equity account reflecting the restricted \$3,054,502 held by the State on behalf of the SDSTA for future xenon purchases, infrastructure upgrades for experiments and future interest payments to investors in xenon purchases for the LZ experiment.

Total Liabilities & Equity—Increase to \$122,628,816 from the previous month of \$122,475,165.

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 February 2016 is 14,400,404 (increase from January of \$2,093,539). Included in this increase is the contract with LBNL for the Ross Shaft Rehabilitation that began in January.

National Science Foundation (NSF) Subcontracts—Total revenue through February 2016 from NSF funding is \$1,135. The balance represents revenue from a small subaward through University of Minnesota.

State Revenue—Year-to-date State Revenue equals \$2,023,457. Included is the \$2M received in September from the Governor's Office of Economic Development (GOED) to assist in the costs of infrastructure upgrades for experiments, the procurement of xenon for LZ and interest payments to future investors in this xenon procurement program. Funding has been received from Black Hills State University (BHSU) and South Dakota School of Mines and Technology (SDSM&T) in the amount of \$14,533 for cleanroom related expenses and monthly operational expenses in the Ross Underground Campus. The balance also includes a small amount of funding (\$924) from the University of South Dakota state research funds for the Center for Ultra-Low Background Experiments in the Dakotas (CUBED) as well as \$8,000 from the South Dakota Experimental Program to Stimulate Competitive Research (EPSCoR) to fund Davis Bahcall scholars work experience internships from this past summer.

Contributions & Donations—Fund raising activities include the receipt of \$125,000 from the Great Plains Education Foundation, \$25,000 from the Deadwood Historical Commission and \$57,782 from the City of Lead. In January we received the final \$200,000 pledged last year by Black Hills Power for the continued development of Sanford Lab. Total contributions and donations for this fiscal year through February 2016 is \$407,782.

Interest income recorded for the current fiscal year on State Funds is at \$78,064. This represents interest accruing at 0.75% 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 \$12,306,466 for the year. Indirect Costs including fringe benefits are at \$5,233,548. Other Income through the month of February is at \$237,980 which represents miscellaneous income received from Xilinx (a commercial company) discussed earlier, and small amounts for water treated and electric usage for Barrick.

Net Income for the year is at \$515,588.

Comparative Balance Sheet

Significant differences include Total in Local Checking which is higher by \$1,444,997. Payments on various contracts that were received late in February contribute to this balance. Total Cash with State Treasurer is lower by \$8,659,700 from this time last year as funds were expended over the 12-month period. This reduction in cash also includes the transfer of \$2,500,000 to Investment in Captive Insurance. Yet, the new Experiments account has an increase of \$3,054,502 for funds received to be used toward xenon purchases, interest payments to investors and to assist with infrastructure upgrades for experiments. Other notable differences exist for changes in Fixed Assets which have increased by \$14,165,063 primarily due to the year-end capitalization of fixed assets for FY2015. Work in Progress has decreased from this time last year by \$823,985 represented by a decrease in activity in our CAPEX projects when comparing the two time frames. Increases of \$7,176,478 and \$2,500,000 respectively are a result of the two new designations—Pension Deferred Outflows and Investment Captive Insurance. In summary, Total Assets have increased by \$15,375,929. Total Current Liabilities have increased slightly by \$273,909 from this time last year, primarily due to an increase in Accrued Payroll Liabilities. Total Other Liabilities have increased by \$6,237,351 because of the new designations for Long Term Xenon Notes Payable and Pension Deferred Inflows. Total Equity has increased by \$8,864,669 from this time last year. Even though Restricted Funds have decreased, the Investment in General Fixed Assets has increased for the capitalization of projects from FY2015. In summary, Total Liabilities & Equity have increased by \$15,375,929.

Comparative Profit/Loss

Total Revenue for year-to-date February 2016 compared to year-to-date February 2015 has increased by \$4,371,155. DOE subcontract revenue has increased by 38%. State Revenue has increased primarily due to the \$2M received from the State of SD (GOED) to be used for the purchase of xenon, experiment infrastructure improvements and interest for xenon investors. Contributions & Donations are slightly lower when comparing the two time frames. Interest Income is lower for year-to-date February 2016 due to a lower cash balance with the State compared to last year. Direct Costs and Indirect Costs for year-to-date February 2016 compared to this time last year show a combined increase of \$3,683,570 (26.6% increase), primarily due to increased contractual services for the Long-Baseline Neutrino Facility (LBNF) projects. Net Income for the comparative time periods shows an increase of \$782,602 which reflects the net activity as listed above.

Available Cash

This report reflects our available cash after noting the restricted cash balances in the Indemnification and Mine Closure accounts, and funds held for xenon purchase, experiment infrastructure upgrades and interest for investors. The Sanford Gift No. 2 account is no longer designated as “restricted” in the same sense as the Indemnification and Mine Closure accounts due to the signing of the Fourth Amendment to the Homestake Gift Agreement. After our liabilities are noted, \$1,973,812 is available to be used for a limited scope of SDSTA expenses (Board, Administration, Education & Outreach, Science Liaison, and Sanford Visitor Center Director expenses not covered by the current DOE funding), for current contracts related to the various capital expenditure projects, and towards the specific educational projects listed in the Fourth Amendment.

Operating Budget Analysis

This report is separated into three sections: SDSTA-funded activities, Federal & State funded activities and Indirect expenses that benefit various activities. A few areas are over budget for the month, but by immaterial amounts. Total operating expenses are under budget for February 2016 by \$237,105, primarily due to lower than budgeted expenses in the new Ross Shaft Rehabilitation contract with LBNL. Year-to-date figures are almost all under budget for a total under run of \$1,005,509. Actuals will get closer to budgeted amounts as the LBNF activities increase.

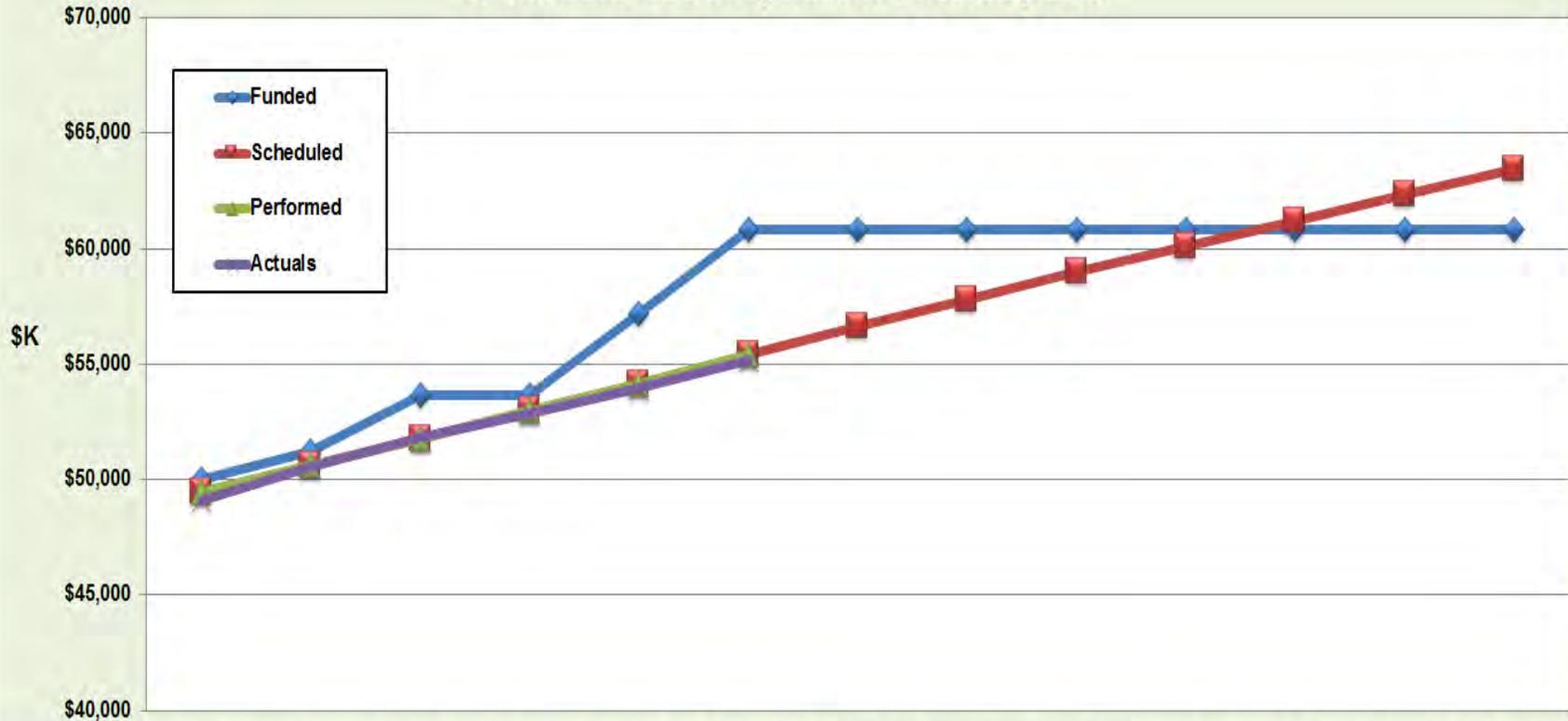
Capital Expenditure Budget Analysis

Our current capital expenditure projects have been condensed and are listed from CAP2012-27—CAP2016-04 with various breaks in the numbering sequence. Total project dollars are at \$12,415,257, which represents the approved budget from the June 2015 Board meeting along with the additional \$200,000 received from Black Hills Power. The \$200,000 will be funding a pipe fusion contract and materials for our ongoing water inflow project. 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 Fourth Amendment to the Homestake Gift Agreement, funding from private fund raising activities, a small amount from BHSU and SDSTA funds including interest. Funding for CAP2012-27 Ross Shaft Rehabilitation has transitioned through LBNL with a new contract beginning in January 2016. Funding for the LZ Surface & Facility Upgrades and LZ Xenon Gas Purchase was secured from the State of SD (GOED) granting \$6,000,000 over three years. Additionally, loan documents have been executed for \$2,000,000 from the SDCF to be used for xenon purchases. This \$2,000,000 was received in October. In early February loan documents were executed with the South Dakota State University Foundation committing \$2,000,000 as a loan for further xenon purchases. In February 2016, we spent \$216,153 on our CAPEX projects out of the budgeted \$244,373. Year-to-date we have expended \$5,826,880 on this list of projects.

Human Resources

We currently have 128 full time employees and 16 temporary staff, primarily Emergency Response Team members. Four Infrastructure Technician positions were filled; one to replace David Smith that recently resigned and three to fill in for staff out on medical leave. A position for a full-time Custodian was posted in February. The open positions of Contracts Specialist, ESH Technical Support Lead and Director of Underground Access are all in process of being backfilled. Radiation/Experiment Health & Safety Manager Charles Lichtenwalner will be retiring effective March 31, 2016. This position will also be backfilled.

TOTAL SURF SDSTA Operations - February 2016



	CTD	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16
Funded	\$ 49,997	\$ 51,197	\$ 53,650	\$ 53,650	\$ 57,202	\$ 60,838	\$ 60,838	\$ 60,838	\$ 60,838	\$ 60,838	\$ 60,838	\$ 60,838	\$ 60,838
Scheduled	\$ 49,476	\$ 50,615	\$ 51,768	\$ 52,981	\$ 54,146	\$ 55,425	\$ 56,650	\$ 57,801	\$ 58,993	\$ 60,115	\$ 61,201	\$ 62,348	\$ 63,460
Performed	\$ 49,476	\$ 50,615	\$ 51,768	\$ 52,981	\$ 54,146	\$ 55,425							
Actuals	\$ 49,096	\$ 50,557	\$ 51,818	\$ 52,860	\$ 53,945	\$ 55,185							

**DOE SDSTA FY 2016 SPA Curve
February 2016**

DIVISION: ALL

BALANCE SHEET

ASSETS

		AS OF 02/29/16
<hr/>		
CURRENT ASSETS		
First Interstate Checking	\$	1,550,301.97
First Interstate Other		27,632.44

Total in Local Checking		1,577,934.41
SD Treas: Indemnification		7,500,000.00
SD Treas: Mine Closure		1,379,921.18
SD Treas: Operating		168,270.49
SD Treas: Sanford		289,289.35
SD Treas: Sanford Gift #2		2,355,954.97
SD Treas: Experiments		3,054,502.00

Total with SD Treasurer		14,747,937.99
Billed A/R		2,004,609.80
Unbilled A/R		512,897.86
Other A/R		123,096.54
Inventory - Supplies		2,521,607.24
Inventory - Warehouse		368,921.81
Other Current Assets		292,777.09

Total Current Assets		22,149,782.74
FIXED ASSETS		
Land, Underground & Other		12,398,635.03
Bldgs & Infrastructure		8,881,327.62
Improvements		64,557,726.85
Computer Equipment		455,888.25
Equipment & Fixtures		10,146,817.44
Accum Depr & Amort		(10,370,552.35)

Total Fixed Assets		86,069,842.84
OTHER ASSETS		
Work in Process		4,328,647.80
Equipment - Capital Lease		404,065.01
Pension Deferred Outflows		7,176,478.00
Investment Captive Ins.		2,500,000.00

Total Other Assets		14,409,190.81
TOTAL ASSETS	\$	122,628,816.39
		=====

DIVISION: ALL

BALANCE SHEET

LIABILITIES & EQUITY

AS OF
02/29/16

CURRENT LIABILITIES

Accounts Payable	\$	1,297,540.10
Other Payables		8,091.16

Total Accounts Payable		1,305,631.26
Accrued Payroll Liab		1,200,838.97

Total Current Liabilities		2,506,470.23

OTHER LIABILITIES

LT Accrued EB/Lease		404,065.01
LT Xenon Notes Payable		2,000,000.00
Pension Deferred Inflows		4,412,373.00

Total Other Liabilities		6,816,438.01

EQUITY

Restricted: Indemnificati		7,500,000.00
Restricted: Captive		2,500,000.00
Restricted: Sanford I.Lab		289,289.35
Restricted: Mine Closure		1,379,921.18
Restricted: Sanford Gift2		2,221,455.00
Restricted: Pension		2,764,105.00
Restricted: Experim. Int.		3,054,502.00

Total Restricted Funds		19,709,272.53
Investment in Gen FA		86,069,842.84
Unrestricted Funds		7,526,792.78

Total Equity		113,305,908.15

TOTAL LIABILITIES & EQUITY

	\$	122,628,816.39
		=====

ALL

STATEMENT OF INCOME

FOR THE PERIOD ENDING 02/29/16

	YR-TO-DATE

REVENUE	
DOE Subcontracts	\$ 14,400,404.01
NSF Subcontracts	1,134.98
State Revenue	2,023,457.04
Contributions & Donations	407,781.62
Checking Interest	113.49
Interest Income	78,063.87

TOTAL REVENUE	16,910,955.01
DIRECT COSTS	
Direct Labor	4,852,916.02
ERT Labor	20,326.14
Board of Directors	9,320.70
Capital Outlay >\$5K	130,040.65
Contractual Svcs	4,405,025.81
Inventory	193,977.04
Supplies	654,526.71
Travel - Domestic	60,591.79
Travel - Foreign	34,962.18
Utilities	1,545,652.05
Other Direct Costs	162,298.77
Unallow/Unbill Costs	236,827.97

TOTAL DIRECT COSTS	12,306,465.83
INDIRECT COSTS	
Fringe Benefits	2,525,316.96
Overhead	2,708,231.38

TOTAL INDIRECT COSTS	5,233,548.34

GROSS PROFIT FROM OPERATIONS	(629,059.16)

OTHER INCOME	
Water Treatment	179,295.63
Miscellaneous Income	56,247.36
Other Operating Income	2,437.06

TOTAL OTHER INCOME	237,980.05
OTHER EXPENSES	
Loss(Gain) on Sale of FA	154,564.38
Reclass Incr Net Assets	(1,061,231.64)

TOTAL OTHER EXPENSES	(906,667.26)
	=====
NET INCOME/LOSS ()	515,588.15
	=====

DIVISION: ALL

COMPARATIVE BALANCE SHEET

ASSETS

	AS OF 02/29/16	AS OF 02/28/15	\$ CHANGE	% CHANGE
CURRENT ASSETS				
First Interstate Checking	\$ 1,550,301.97	\$ 100,049.77	\$ 1,450,252.20	1449.53%
First Interstate Other	27,632.44	32,887.63	(5,255.19)	-15.98%
	-----	-----	-----	-----
Total in Local Checking	1,577,934.41	132,937.40	1,444,997.01	1086.98%
SD Treas: Indemnification	7,500,000.00	10,000,000.00	(2,500,000.00)	-25.00%
SD Treas: Mine Closure	1,379,921.18	1,362,763.38	17,157.80	1.26%
SD Treas: Operating	168,270.49	1,211,165.00	(1,042,894.51)	-86.11%
SD Treas: Sanford	289,289.35	5,314,421.48	(5,025,132.13)	-94.56%
SD Treas: Sanford Gift #2	2,355,954.97	5,519,288.00	(3,163,333.03)	-57.31%
SD Treas: Experiments	3,054,502.00	-	3,054,502.00	100.00%
	-----	-----	-----	-----
Total with SD Treasurer	14,747,937.99	23,407,637.86	(8,659,699.87)	-37.00%
Billed A/R	2,004,609.80	2,146,597.56	(141,987.76)	-6.61%
Unbilled A/R	512,897.86	365,454.14	147,443.72	-40.35%
Other A/R	123,096.54	338,027.71	(214,931.17)	-63.58%
Inventory - Supplies	2,521,607.24	2,569,692.22	(48,084.98)	-1.87%
Inventory - Warehouse	368,921.81	369,794.91	(873.10)	-0.24%
Other Current Assets	292,777.09	286,245.06	6,532.03	2.28%
	-----	-----	-----	-----
Total Current Assets	22,149,782.74	29,616,386.86	(7,466,604.12)	-25.21%
FIXED ASSETS				
Land, Underground & Other	12,398,635.03	12,353,375.03	45,260.00	0.37%
Bldgs & Infrastructure	8,881,327.62	8,881,327.62	-	0.00%
Improvements	64,557,726.85	49,274,276.00	15,283,450.85	31.02%
Computer Equipment	455,888.25	362,464.95	93,423.30	25.77%
Equipment & Fixtures	10,146,817.44	9,455,471.64	691,345.80	7.31%
Accum Depr & Amort	(10,370,552.35)	(8,422,135.13)	(1,948,417.22)	23.13%
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Total Fixed Assets	86,069,842.84	71,904,780.11	14,165,062.73	19.70%
OTHER ASSETS				
Work in Process	4,328,647.80	5,152,633.20	(823,985.40)	-15.99%
Equipment - Capital Lease	404,065.01	579,087.12	(175,022.11)	-30.22%
Pension Deferred Outflows	7,176,478.00	-	7,176,478.00	100.00%
Investment Captive Insurance	2,500,000.00	-	2,500,000.00	100.00%
	-----	-----	-----	-----
Total Other Assets	14,409,190.81	5,731,720.32	8,677,470.49	151.39%
	=====	=====	=====	=====
TOTAL ASSETS	\$ 122,628,816.39	\$ 107,252,887.29	\$ 15,375,929.10	14.34%
	=====	=====	=====	=====

DIVISION: ALL

COMPARATIVE BALANCE SHEET

LIABILITIES & EQUITY

	AS OF 02/29/16	AS OF 02/28/15	\$ CHANGE	% CHANGE
CURRENT LIABILITIES				
Accounts Payable	\$ 1,297,540.10	\$ 1,194,097.16	\$ 103,442.94	8.66%
Other Payables	8,091.16	28,329.06	(20,237.90)	-71.44%
	-----	-----	-----	-----
Total Accounts Payable	1,305,631.26	1,222,426.22	83,205.04	6.81%
Accrued Payroll Liab	1,200,838.97	1,010,134.91	190,704.06	18.88%
	-----	-----	-----	-----
Total Current Liabilities	2,506,470.23	2,232,561.13	273,909.10	12.27%
OTHER LIABILITIES				
LT Accrued EB/Lease	404,065.01	579,087.12	(175,022.11)	-30.22%
LT Xenon Notes	2,000,000.00	-	2,000,000.00	100.00%
Pension Deferred Inflows	4,412,373.00	-	4,412,373.00	100.00%
	-----	-----	-----	-----
Total Other Liabilities	6,816,438.01	579,087.12	6,237,350.89	1077.10%
	-----	-----	-----	-----
TOTAL LIABILITIES	9,322,908.24	2,811,648.25	6,511,259.99	231.58%
EQUITY				
Restricted: Indemnificati	7,500,000.00	10,000,000.00	(2,500,000.00)	-25.00%
Restricted: Captive	2,500,000.00	-	2,500,000.00	100.00%
Restricted: Sanford I.Lab	289,289.35	5,314,421.48	(5,025,132.13)	-94.56%
Restricted: Mine Closure	1,379,921.18	1,362,763.38	17,157.80	1.26%
Restricted: Sanford Gift2	2,221,455.00	5,519,288.00	(3,297,833.00)	-59.75%
Restricted: Pension	2,764,105.00	-	2,764,105.00	100.00%
Restricted: Experim. Int.	3,054,502.00	-	3,054,502.00	100.00%
	-----	-----	-----	-----
Total Restricted Funds	19,709,272.53	22,196,472.86	(2,487,200.33)	-11.21%
Investment in Gen FA	86,069,842.84	71,898,698.84	14,171,144.00	19.71%
Unrestricted Funds	7,526,792.78	10,346,067.34	(2,819,274.56)	-27.25%
	-----	-----	-----	-----
TOTAL EQUITY	113,305,908.15	104,441,239.04	8,864,669.11	8.49%
	=====	=====	=====	=====
TOTAL LIABILITIES & EQUITY	\$ 122,628,816.39	\$ 107,252,887.29	\$ 15,375,929.10	14.34%
	=====	=====	=====	=====

COMPARATIVE STATEMENT OF INCOME

FOR THE PERIOD ENDING 02/29/16

	YEAR TO DATE	PRIOR YEAR TO DATE	\$ CHANGE	% CHANGE
REVENUE				
DOE Subcontracts	\$ 14,400,404.01	\$ 10,434,916.80	\$ 3,965,487.21	38.00%
NSF Subcontracts	1,134.98	15,415.59	(14,280.61)	-92.64%
State Revenue	2,023,457.04	1,368,662.95	654,794.09	47.84%
Contributions & Donations	407,781.62	590,000.00	(182,218.38)	-30.88%
Checking Interest	113.49	47.78	65.71	137.53%
Interest Income	78,063.87	130,756.91	(52,693.04)	-40.30%
TOTAL REVENUE	16,910,955.01	12,539,800.03	4,371,154.98	34.86%
DIRECT COSTS				
Direct Labor	4,852,916.02	4,870,552.23	(17,636.21)	-0.36%
ERT Labor	20,326.14	23,652.00	(3,325.86)	-14.06%
Board of Directors	9,320.70	3,433.62	5,887.08	171.45%
Capital Outlay >\$5K	130,040.65	25,299.00	104,741.65	414.01%
Contractual Svcs	4,405,025.81	1,755,531.01	2,649,494.80	150.92%
Emergency Resp	-	2,346.49	(2,346.49)	-100.00%
Inventory	193,977.04	233,242.93	(39,265.89)	-16.83%
Supplies	654,526.71	440,402.94	214,123.77	48.62%
Travel - Domestic	60,591.79	49,474.58	11,117.21	22.47%
Travel - Foreign	34,962.18	24,216.81	10,745.37	44.37%
Utilities	1,545,652.05	1,288,979.29	256,672.76	19.91%
Other Direct Costs	162,298.77	89,640.36	72,658.41	81.06%
Unallow/Unbill Costs	236,827.97	271,474.92	(34,646.95)	-12.76%
TOTAL DIRECT COSTS	12,306,465.83	9,078,246.18	3,228,219.65	35.56%
INDIRECT COSTS				
Fringe Benefits	2,525,316.96	2,272,790.60	252,526.36	11.11%
Overhead	2,708,231.38	2,505,407.79	202,823.59	8.10%
TOTAL INDIRECT COSTS	5,233,548.34	4,778,198.39	455,349.95	9.53%
GROSS PROFIT	(629,059.16)	(1,316,644.54)	687,585.38	52.22%
OTHER INCOME				
Water Treatment	179,295.63	115,439.67	63,855.96	55.32%
Miscellaneous Income	56,247.36	40,488.28	15,759.08	38.92%
Other Operating Income	2,437.06	-	2,437.06	100.00%
TOTAL OTHER INCOME	237,980.05	155,927.95	82,052.10	52.62%
OTHER EXPENSES				
Loss(Gain) on Sale of FA	154,564.38	2,852.14	151,712.24	5319.24%
Reclass Incr Net Assets	(1,061,231.64)	(896,554.61)	(164,677.03)	18.37%
TOTAL OTHER EXPENSES	(906,667.26)	(893,702.47)	(12,964.79)	1.45%
NET INCOME/LOSS ()	\$ 515,588.15	\$ (267,014.12)	\$ 782,602.27	293.09%

South Dakota Science & Technology Authority
Available Cash
2/9/2016

Cash Total Checking/Savings	\$ 1,557,934
Cash With State Treasurer	<u>\$ 14,747,938</u>
Total Cash	\$ 16,305,872
Less: Restricted Funds	
Indemnification/Mine Closure	\$ (8,879,921)
Experiments (Xenon, Interest,Infrastructure)	<u>\$ (3,054,502)</u>
Total Cash Available for Infrastructure Upgrades and Operations	\$ 4,371,449
Less: Total Liabilities w/out Xenon Notes Payable & Pension	<u>\$ (2,397,637)</u>
Available Cash	<u><u>\$ 1,973,812</u></u>

SDSTA Operating Budget Summary FY2016

Actual vs Budget

Feb.2016 & YTD

	\$ Over/Under				\$ Over/Under				
	February 2016	Budget	Budget	% of Budget	Actual YTD	YTD Budget	Budget	% of Budget	% Remaining
100%									
SDSTA (Authority) Direct Charges									
Board of Directors	\$17,997.00	\$19,850.00	\$1,853.00	90.67%	\$154,494.00	\$157,801.00	\$3,307.00	97.90%	2.10%
Executive Office	\$22,493.00	\$23,576.00	\$1,083.00	95.41%	\$127,782.00	\$134,018.00	\$6,236.00	95.35%	4.65%
Science Center E & O	\$0.00	\$0.00	\$0.00	0.0%	\$26,028.00	\$25,749.00	-\$279.00	101.08%	-1.08%
Science Liaison	\$813.00	\$373.00	-\$440.00	217.96%	\$1,535.00	\$2,984.00	\$1,449.00	0.00%	100.00%
Sanf.L.Visitor C. (Director)	\$6,298.00	\$6,131.00	-\$167.00	102.72%	\$47,234.00	\$50,800.00	\$3,566.00	92.98%	7.02%
Subtotal	\$47,601.00	\$49,930.00	\$2,329.00	95.34%	\$357,073.00	\$371,352.00	\$14,279.00	96.15%	3.85%
Federal/State Funding - Direct Charges									
Fermi P.O.#618228 Staff Services	\$0.00	\$0.00	\$0.00	0.0%	\$298,415.00	\$230,062.00	-\$68,353.00	129.71%	-29.71%
Fermi P.O.#618741 Excav.Des.	\$264,832.00	\$275,000.00	\$10,168.00	96.3%	\$1,252,747.00	\$1,416,157.00	\$163,410.00	88.46%	11.54%
Fermi P.O.#620223 Building/Infra.	\$44,323.00	\$50,000.00	\$5,677.00	88.65%	\$1,930,385.00	\$2,292,987.00	\$362,602.00	84.19%	15.81%
Fermi P.O.#622034 WasteRockSt.	\$0.00	\$0.00	\$0.00	0.0%	\$56,150.00	\$69,200.00	\$13,050.00	81.14%	18.86%
Fermi P.O.#623825 RiskWShop	\$0.00	\$0.00	\$0.00	0.0%	\$22,567.00	\$24,269.00	\$1,702.00	92.99%	7.01%
Fermi P.O.#624787 BlastStudy	\$1,277.00	\$1,500.00	\$223.00	85.13%	\$62,610.00	\$68,500.00	\$5,890.00	91.40%	8.60%
Fermi P.O.#624751 Director Review	\$0.00	\$0.00	\$0.00	0.0%	\$3,813.00	\$6,653.00	\$2,840.00	57.31%	42.69%
Fermi P.O.#625206 CD3Review	\$0.00	\$0.00	\$0.00	0.0%	\$5,022.00	\$7,650.00	\$2,628.00	65.65%	34.35%
Fermi P.O.#625500 F.SiteFacil.Servic	\$19,190.00	\$22,977.00	\$3,787.00	83.52%	\$38,646.00	\$42,754.00	\$4,108.00	90.39%	9.61%
Fermi P.O.#625501 Engin.Services	\$17,152.00	\$18,583.00	\$1,431.00	92.3%	\$27,687.00	\$32,123.00	\$4,436.00	86.19%	13.81%
Fermi P.O.#625691 B/Site Final Des.	\$46,705.00	\$50,000.00	\$3,295.00	93.41%	\$46,705.00	\$50,000.00	\$3,295.00	93.41%	6.59%
Fermi P.O.#625692 Pre Excav.F.D.	\$7,464.00	\$50,000.00	\$42,536.00	14.93%	\$7,464.00	\$50,000.00	\$42,536.00	14.93%	85.07%
LBNL LUX C#6973786	\$12,623.00	\$9,721.00	-\$2,902.00	129.85%	\$77,899.00	\$83,539.00	\$5,640.00	93.25%	6.75%
LBNL Operations C#6994297	\$1,016,542.00	\$1,047,474.00	\$30,932.00	97.05%	\$7,286,760.00	\$7,541,449.00	\$254,689.00	96.62%	3.38%
LBNL LUX/Zeplin C#7093667	\$0.00	\$0.00	\$0.00	0.0%	\$50,721.00	\$58,992.00	\$8,271.00	85.98%	14.02%
LBNL LUX/Zeplin C#7255146	\$28,263.00	\$21,208.00	-\$7,055.00	133.27%	\$84,703.00	\$75,634.00	-\$9,069.00	111.99%	-11.99%
LBNL Ross Rehab C#7262800	\$296,639.00	\$423,273.00	\$126,634.00	70.08%	\$544,581.00	\$985,916.00	\$441,335.00	55.24%	44.76%
MJD (Majorana) # 5-4473	\$0.00	\$0.00	\$0.00	0.0%	\$9,130.00	\$12,000.00	\$2,870.00	76.08%	23.92%
MJD (Majorana) ORNL144149	\$2,067.00	\$2,000.00	-\$67.00	103.35%	\$6,026.00	\$6,000.00	-\$26.00	100.43%	-0.43%
CUBED - USD	\$0.00	\$0.00	\$0.00	0.0%	\$739.00	\$1,000.00	\$261.00	73.90%	26.10%
BHSU-UGCampus Gen.Serv.	\$61.00	\$200.00	\$139.00	30.5%	\$61.00	\$200.00	\$139.00	30.50%	69.50%
Sanf.Sci.Ed.Center - GOED Funded	\$28,025.00	\$30,000.00	\$1,975.00	93.42%	\$266,210.00	\$257,085.00	-\$9,125.00	103.55%	-3.55%
U. of Minn. DUGL#A003778902	\$0.00	\$0.00	\$0.00	0.0%	\$908.00	\$2,000.00	\$1,092.00	45.40%	54.60%
SDSM&Tech CASPAR Gen.Serv.	\$5,037.00	\$4,800.00	-\$237.00	104.94%	\$5,037.00	\$4,800.00	-\$237.00	104.94%	-4.94%
* Xilinx, Inc. P.O.#732495	\$295.00	\$400.00	\$105.00	73.75%	\$1,944.00	\$3,720.00	\$1,776.00	52.26%	47.74%
Subtotal	\$1,790,495.00	\$2,007,136.00	\$216,641.00	89.21%	\$12,086,930.00	\$13,322,690.00	\$1,235,760.00	90.72%	9.28%
Indirect Expenses									
Indirect Charges Personnel	\$110,193.00	\$115,000.00	\$4,807.00	95.82%	\$879,900.00	\$897,634.00	\$17,734.00	98.02%	1.98%
Indirect Charges Other	\$280,341.00	\$293,669.00	\$13,328.00	95.46%	\$2,080,990.00	\$1,818,726.00	-\$262,264.00	114.42%	-14.42%
Subtotal	\$390,534.00	\$408,669.00	\$18,135.00	95.56%	\$2,960,890.00	\$2,716,360.00	-\$244,530.00	109.00%	-9.00%
Totals	\$2,228,630.00	\$2,465,735.00	\$237,105.00	90.38%	\$15,404,893.00	\$16,410,402.00	\$1,005,509.00	93.87%	6.13%

* Private Corporation (Commercial Group)

SDSTA CAPEX Budget Summary FY15/16
Actual vs Budget
February 2016 & YTD

<u>Budget Area</u>	FY2016 Monthly				FY2016 YTD				
	<u>Actual Month</u>	<u>Budget</u>	<u>\$ Over/Under Budget</u>	<u>% of Budget</u>	<u>Actual YTD</u>	<u>Budget</u>	<u>\$ Over/Under Budget</u>	<u>% of Budget</u>	<u>% Remaining</u>
									100.00%
Operational CAPEX	\$ 216,153.21	\$ 244,373.00	\$ 28,219.79	88.45%	\$ 5,826,879.55	\$ 12,415,257.00	\$ 6,588,377.45	46.93%	53.07%
TOTAL CAPEX	\$ 216,153.21	\$ 244,373.00	\$ 28,219.79	88.45%	\$ 5,826,879.55	\$ 12,415,257.00	\$ 6,588,377.45	46.93%	53.07%

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

Project #	Project Description	Feb. 2016	Budget	\$ Over/UnderBudget	% of Budget
CAP2012-27	Ross Shaft Furnishings Repl.M&S	\$ 264.15	\$ -	\$ (264.15)	100.00%
CAP2012-28	Work Decks	\$ -	\$ -	\$ -	0.00%
CAP2012-32	SDSTA Personnel	\$ 3,176.15	\$ 2,473.00	\$ (703.15)	128.43%
CAP2014-01	Sanford Visitor Center Design & Construction	\$ 4,939.59	\$ -	\$ (4,939.59)	100.00%
CAP2014-05	CASPAR Experiment Development	\$ -	\$ -	\$ -	0.00%
CAP2014-06	BHSU Jonas Science Building Renovation	\$ 177,571.50	\$ 200,000.00	\$ 22,428.50	12.63%
CAP2014-09	CASPAR Facility Development	\$ (2,293.58)	\$ -	\$ 2,293.58	-100.00%
CAP2014-11	BHSU Facility Development	\$ 3,720.13	\$ -	\$ (3,720.13)	100.00%
CAP2016-01	Sanford Visitor Center Exhibit Davis Tribute	\$ -	\$ -	\$ -	100.00%
CAP2016-02	LZ Surface & Facility Upgrades	\$ 17,402.00	\$ 31,900.00	\$ 14,498.00	54.55%
CAP2016-03	LZ Xenon Gas	\$ 3,604.55	\$ -	\$ (3,604.55)	100.00%
CAP2016-04	Water Inflow Project - Pipe Fusing	\$ 7,768.72	\$ 10,000.00	\$ 2,231.28	28.72%
	Monthly Totals	\$ 216,153.21	\$ 244,373.00	\$ 28,219.79	88.45%

SD Science & Technology Authority
Operational CAPEX Budget
YTD FY2016 Actual vs Budget

Project #	Project Description	February YTD	FY2016 Budget	\$ Over/UnderBudget	% of Budget	% Remaining
						100%
CAP2012-27	Ross Shaft Furnishings Repl.M&S	\$1,396,941.26	\$ 3,212,394.00	\$ 1,815,452.74	43.49%	56.51%
CAP2012-28	Work Decks	\$28,601.47	\$ 34,577.00	\$ 5,975.53	82.72%	17.28%
CAP2012-32	SDSTA Personnel	\$1,219,020.09	\$ 2,399,004.00	\$ 1,179,983.91	50.81%	49.19%
CAP2014-01	Sanford Visitor Center Design & Construction	\$288,434.10	\$ 337,017.00	\$ 48,582.90	85.58%	14.42%
CAP2014-05	CASPAR Experiment Development	\$40,739.94	\$ 301,347.00	\$ 260,607.06	13.52%	86.48%
CAP2014-06	BHSU Jonas Science Building Renovation	\$602,021.14	\$ 1,116,209.00	\$ 514,187.86	53.93%	46.07%
CAP2014-09	CASPAR Facility Development	\$899,203.97	\$ 959,709.00	\$ 60,505.03	93.70%	6.30%
CAP2014-11	BHSU Facility Development	\$314,616.16	\$ 275,000.00	\$ (39,616.16)	114.41%	-14.41%
CAP2016-01	Sanford Visitor Center Exhibit Davis Tribute	\$71,351.59	\$ 80,000.00	\$ 8,648.41	89.19%	10.81%
CAP2016-02	LZ Surface Facility Upgrades	\$261,929.02	\$ 1,500,000.00	\$ 1,238,070.98	17.46%	82.54%
CAP2016-03	LZ Xenon Gas	\$696,252.09	\$ 2,000,000.00	\$ 1,303,747.91	34.81%	65.19%
CAP2016-04	Water Inflow Project - Pipe Fusing	\$7,768.72	\$ 200,000.00	\$ 192,231.28	3.88%	96.12%
	Totals	\$5,826,879.55	\$ 12,415,257.00	\$ 6,588,377.45	46.93%	53.07%

Source/WBS	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16
SDSTA	3.20	3.20	3.20	1.20								
Administration	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Communication	2.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DOE OPERATIONS	76.55	76.55	76.55	77.55	77.55	77.85						
Administration	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
EHS	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
Engineering	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15
Science	3.80	3.80	3.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80
Operations												
Management	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Ross Shaft	3.10	3.10	3.10	3.10	3.10	3.40	3.40	3.40	3.40	3.40	3.40	3.40
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	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Hoist Maintenance	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86
Ventilation	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Hazard Mitigation	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Water Treatment	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20
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	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
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	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93	5.93
Equipment Maintenance	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Davis Campus	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
SDSTA CAPEX	29.25	29.25	29.25	0.35								
ROSS SHAFT (DOE)				28.00	28.00	31.60						
GEN 2 LZ	1.25	1.25	1.25	2.25	2.25	2.25	2.00	2.00	2.00	2.00	2.00	2.00
LBNF / DUNE	2.40											
LUX OPERATIONS	0.10											
INDIRECT	14.10	14.10	14.10	16.10								
Grand Total	126.85	126.85	126.85	127.95	127.95	131.85	131.60	131.60	131.60	131.60	131.60	131.60

**SDSTA Staffing Plan by Funding Source
February 2016**

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DECLARATION OF SURPLUS PROPERTY

The South Dakota Science and Technology Authority (SDSTA) was given two 125 horsepower (HP) Roots blowers as part of the April, 2006 Property Donation Agreement between Homestake Mining Company of California, the State of South Dakota and the SDSTA.

One of the blowers is in poor working condition and the other blower has a burned out motor. They have been taken out of production. The blowers are valued at less than Two Thousand Five Hundred Dollars (\$2,500) total after depreciation.

Having no further use for the 125 HP Roots blowers, I hereby declared these items to be Surplus Property.

Dated at Lead, South Dakota this 26th day of February, 2016.

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

Mike Headley
SDSTA Executive Director



DECLARATION OF SURPLUS PROPERTY

The South Dakota Science and Technology Authority (SDSTA) was given three crushers—Allis Chalmers 30-55 gyratory primary crusher (SN9509), Nordberg 7-foot standard cone crusher (SN7661) and Nordberg 7-foot short head crusher—and Tyler F600 screens and bearings (SN4631, SN 4632) as part of the April, 2006 Property Donation Agreement between Homestake Mining Company of California, the State of South Dakota and the SDSTA.

The items were never put into production and the SDSTA has no use for them. The three Yates crushers are old but usable pieces of equipment. They are valued at Two Thousand Five Hundred Dollars (\$2,500) total and will be sold to any interested parties. The screens and bearings were given to F&H Mining Supply as scrap.

I hereby declared the three Yates crushers, screens and bearings to be Surplus Property.

Dated at Lead, South Dakota this 29th day of February, 2016.

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

Mike Headley
SDSTA Executive Director

INTERGOVERNMENTAL AGREEMENT
BETWEEN THE
BUREAU OF ADMINISTRATION,
OFFICE OF RISK MANAGEMENT
OF THE STATE OF SOUTH DAKOTA
AND THE
SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

This INTERGOVERNMENTAL AGREEMENT (“AGREEMENT”) is made and entered into effective the 1st day of July, ~~2015~~2016, between the South Dakota Bureau of Administration, Office of Risk Management, 1429 E. Sioux Avenue, Pierre, South Dakota 57501 (“ORM”), and the South Dakota Science and Technology Authority, 630 E. Summit, Lead, South Dakota, 57754 (“STA”) pursuant to SDCL Ch. 1-24 and in particular SDCL 1-24-8.

Introduction and Purpose

The State of South Dakota established STA to facilitate the development of the former Homestake gold mine into an underground science laboratory (“the Sanford Laboratory”) and to lead the operation of the Sanford Laboratory. The mission of the STA is “to enable ~~compelling underground~~compelling underground, multidisciplinary research in a safe work environment and ~~foster transformational science~~to inspire and educate through science, technology, and engineering.”

When operating as an active mine, the Homestake gold mine was regulated by the U.S. Mine Safety and Health Administration (“MSHA”) and the South Dakota Department of Environment and Natural Resources (“DENR”). STA received title to the Homestake site in 2006 from Homestake Mining Company of California after the 2003 closure of the mining facility.

MSHA and DENR continued to administer and enforce safety and environmental programs until 2008, at which time the STA sought to clarify MSHA’s regulatory role. MSHA determined at that time it no longer had regulatory jurisdiction over the safety and health operations at the Homestake site due to the completion of mining reclamation and the new function of the site.

The U.S. Occupational Safety and Health Administration’s (“OSHA”) 29 CFR 1926¹ and 29 CFR 1910² are considered the most applicable of the available standards for safety and health for most activities conducted in support of the development of the underground laboratory. MSHA’s 30 CFR³ standards are employed as a best practice for underground activities when the OSHA standards do not sufficiently address a given hazard.

Although OSHA standards are being applied to the work conducted at the Sanford Laboratory, OSHA does not have jurisdictional authority for enforcement of those regulations because STA is for the purposes of OSHA standards and regulation a “political subdivision” as

¹ Title 29 Code of Federal Regulations Part 1926, “Safety and Health Regulations for Construction”

² Title 29 Code of Federal Regulations Part 1910, “Occupational Safety and Health Standards”

³ Title 30 Code of Federal Regulations Parts 1 -199, “Mineral Resources”

defined in 29 CFR 1975.5 because it is administered by individuals who are appointed by the Governor.

ORM has the responsibility to oversee the state's risk management activities. Accordingly, ORM is the agency that is mandated to provide the inspection and audit of state institutions and facilities, and has been designated to serve as the agency having jurisdiction ("AHJ") for occupational safety and health for Sanford Laboratory operations.

STA has entered into a lease (the "Lease") with the United States of America, acting through the Department of Energy (the "Government"), signed by the Government on _____, whereby STA has leased to the Government certain surface and subsurface real estate for the purpose of constructing, operating and maintaining the Long Baseline Neutrino Facility ("LBNF"), and related infrastructure (the "Leased Space"). ORM's jurisdiction hereunder shall not include the Leased Space, but STA and ORM shall continue to consult and cooperate concerning occupational safety and health related to the Leased Space.

The purpose of this Agreement is to clarify the roles and responsibilities, expectations and communications for ORM to serve as the AHJ for STA for implementing occupational safety and health standards.

This Agreement is authorized pursuant to SDCL Ch. 1-24 and SDCL 1-16H-32.

Agreement

A. Safety Standards Applicable to STA. Until amended in writing by ORM, the safety standards applicable to STA's facilities and operations shall be as set out in Appendix A, attached hereto and incorporated herein by this reference. The parties agree that ORM may unilaterally amend Appendix A at any time and in their sole discretion, and all such amendments shall be incorporated herein effective upon 30 days written notice to STA.

The parties further acknowledge and agree that the agency having jurisdiction over the enforcement of building (International Building Code) and fire safety (National Fire Protection Association) codes and standards is the City of Lead, South Dakota. ORM shall not have jurisdiction to apply or enforce any codes and standards.

B. Responsibilities of the ORM⁴. ORM shall:

1. Provide for safety, loss control and regulatory compliance audits and inspections of STA's books, records and facilities;
2. Review claims to identify trends or situations requiring loss prevention efforts;
3. Advise STA on applicable laws, regulations and standards which contribute to a safe work environment at the Sanford Laboratory;
4. Provide for loss control training;
5. Upon request, review contracts for appropriate risk management language;
6. Assist STA with the selection of brokers and insurance companies and in negotiating to obtain the best product for the best price; and

⁴ State of South Dakota Risk Management Manual, The Office of Risk Management, June 25, 2009

7. Provide enforcement of the safety standards made applicable to STA's facilities by this Agreement.
8. Provide copies of the results of safety or compliance reviews, inspections, or audits to STA upon completion.

C. Risk Management Responsibilities of STA⁵. STA shall:

1. Be responsible for coordinating and implementing risk management programs within its departments and at its facilities with the assistance of ORM. STA will provide a safe workplace and conduct operations in a manner that protects employees, contractors, visitors and the public from harm. The STA shall conform to its safety policy: "Perform all work safely, with full regard to the well-being of all stakeholders and the environment;"

2. Take appropriate steps to ensure that all employees, users, visiting scientists, contractors and subcontractors are responsible for conducting work and operations in a safe and environmentally sound manner;

3. Pursuant to Section 6.7 of the Property Donation Agreement⁶ between STA and Homestake, undertake all measures necessary to comply with all applicable federal, state, and local laws and regulations, including, without limitation, laws relating to workers' compensation, mine health and safety, and all Environmental Health and Safety Laws (as defined in the Property Donation Agreement), and shall apply in a timely manner for all Environmental Permits (as defined in the Property Donation Agreement) and all other permits, licenses and approvals necessary for its operations;

4. Assist ORM in identifying, measuring and minimizing exposures to loss by:
 - a. Conducting facility inspections to identify and address safety hazards;
 - b. Conducting services and operations in accordance with applicable laws, regulations, and safety standards;
 - c. Properly reporting accidents, incidents and unsafe conditions;
 - d. Reviewing losses to identify trends or situations requiring loss prevention efforts;
 - e. Ensuring policies and procedures remain current, are communicated to all employees and enforced;
 - f. Drafting all contracts with the appropriate risk management language;
 - g. Communicating changes in exposures to ORM; and
 - h. Implementing ORM's recommendations.

5. Comply with all safety and enforcement directives and actions given by ORM.

6. Comply with requests from ORM for information and documents related to safety or compliance reviews, inspections or audits, including, to the extent available to STA, any such reviews, inspections or audits related to activities in the Leased Space.

⁵ State of South Dakota Risk Management Manual, The Office of Risk Management, June 25, 2009

⁶ Property Donation Agreement Between and Among Homestake Mining Company of California, The State of South Dakota and the South Dakota Science and Technology Authority, April 14, 2006.

D. Agreement Administration. The cooperative undertaking herein described shall be administered by the Parties through their risk management contact persons: ORM through its Director and STA through its Executive Director or authorized designees as contemplated in SDCL 1-24-5.

E. Reporting.

STA employees may contact ORM directly and without risk of retaliation if they feel there is substantial risk of harm to persons or the environment that is not being addressed by STA management.

F. Site Access Rules.

1. STA will provide reasonable accommodations for ORM to have unencumbered access to STA facilities and operations.
2. The parties acknowledge and agree that representatives of ORM conducting activities relating to this Agreement are “Authorized Entrants” as that term as used in the Property Donation Agreement.
3. Access to underground and other hazardous environments shall be provided in a manner that is reasonable and safe.

G. Right to Inspect.

1. ORM has the right to inspect STA facilities at will and with no advance notification when there is reasonable cause.
2. ORM will otherwise provide reasonable notification in advance of scheduled visits.
3. ORM may require STA to undertake third party inspections or oversight visits, or may contract for such inspection and oversight visits in its own right.
4. STA will provide timely notifications to ORM when third party inspections or oversight visits are scheduled, and ORM may observe such third party inspections or oversight visits at ORM’s discretion.
5. Whether or not ORM participates in third party reviews or inspections, STA will provide the results and any findings to ORM.

H. Payment of Costs.

STA shall upon request reimburse ORM for all reasonable costs incurred by ORM for the fees and costs of third party consultants and inspectors, travel costs of ORM personnel, costs

(including reasonable attorney fees) incurred in commencing or maintaining enforcement actions and other, similar costs and expenses. ORM shall provide STA with a written invoice for costs incurred by ORM under this Agreement. STA will contest any portions of the invoice it deems unreasonable and pay any uncontested amount within 30 days of receipt of the invoice. STA agrees to pay all uncontested costs and expenses within 45 day of receipt of invoice.

I. Indemnification and Insurance.

STA shall indemnify and hold the State of South Dakota and its officers, agents and employees (“Indemnified Parties”) harmless from and against any and all claims, causes, actions or causes of action made or asserted against the Indemnified Parties arising out of related to ORM’s duties and responsibilities under this Agreement. STA shall cause the Indemnified Parties to be named as additional insureds under STA’s general liability policy. The limits of liability of STA’s general liability policy shall not be less than \$75 million. STA shall provide such proof of the existence and enforceability of the insurance required by this paragraph as ORM may from time to time reasonably request. Nothing in this paragraph H shall require STA to indemnify ORM or its officers, employees or agents against any claims or losses resulting solely from the negligence or intentional acts of ORM or its officers, employees or agents.

J. Exclusion of Leased Space.

ORM hereby acknowledges receipt of a copy of the Lease. For so long as the Lease remains in force or the parties agree otherwise, ORM’s jurisdiction hereunder shall not include the Leased Space. ORM’s jurisdiction hereunder shall not include the Leased Space, but STA and ORM shall continue to consult and cooperate concerning occupational safety and health related to the Leased Space.

KJ. Duration of Agreement.

This Agreement shall be in effect from July 1, ~~2015~~2016, through June 30, 2017~~6~~.

LK. Remedies - Enforcement.

ORM is entitled to all remedies reasonably necessary to carry out the terms of this Agreement and enforcement of the safety standards made applicable to STA and its facilities by this Agreement. Without limiting the generality of the foregoing, ORM may pursuant to the terms of this Agreement issue an administrative order directing STA to cease operations and/or close all or any portion of its facilities until such time as the violation giving rise to the administrative order has been resolved to ORM’s reasonable satisfaction.

M. Retention of Records.

Each party hereto agrees to retain all books, documents, papers, and records relating to the services and inspections provided for hereunder and for payment and reimbursements for expenses under this Agreement for a period of three years after termination of this Agreement. Such records shall be available for inspection at any reasonable time by personnel authorized therefore by the State of South Dakota.

NM. Funding Out.

This Agreement depends upon the continued availability of appropriate funds and expenditure authority from the Legislature for this purpose. If for any reason the Legislature fails to appropriate funds or grant expenditure authority, or funds become unavailable by operation of law or federal funds reductions, this Agreement will be terminated by ORM. Termination for any of these reasons is not a default by the ORM nor does it give rise to a claim against ORM.

ON. Nature of Agreement.

This Agreement is intended to be an agreement for services by a public agency as contemplated by SDCL 1-24-8. The parties acknowledge that no separate entity as contemplated by SDCL 1-24-4 is being created to implement this Agreement. This Agreement is intended to only to govern the rights and interest of the parties named herein. It is not intended to, does not and may not be relied upon to create any rights, substantial or procedural, enforceable at law by any third party in any matters, civil or criminal.

PO. Governing Law-Venue.

This Agreement shall be governed by and construed in accordance with the laws of the State of South Dakota. Any lawsuit pertaining to or affecting this Agreement shall be venued in Circuit Court, Sixth Judicial Circuit, Hughes County, South Dakota.

QP. Notice.

Any notice or other communication required under this Agreement shall be in writing and sent to the address set forth above. Notices shall be given by and to the Director of ORM, and by and to the Executive Director of STA, or such authorized designees as either party may from time to time designate in writing. Notices or communications to or between the parties shall be deemed to have been delivered when mailed by first class mail, provided that the notice of default or termination shall be sent by registered or certified mail, or, if personally delivered, when received by such party.

RQ. Filing of Agreement.

The parties acknowledge that the ORM will file a true copy of this Agreement with the Office of Attorney General and the Legislative Research Council within 14 days of the execution hereof, as required by SDCL 1-24-6.1.

SR. Alterations and Entire Agreement.

Except as provided in section A. of this Agreement, no amendment, alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by both parties. No oral understanding or agreement not incorporated herein may be binding on any of the parties hereto. Terms expressly stated within the Agreement constitute the entire agreement between ORM and STA. All other prior discussions, communications and representations concerning the subject matter of this Agreement are superseded by the terms of this Agreement, except as specifically provided herein.

TS. Partial Invalidation.

In the event that any court of competent jurisdiction shall hold any provision of this Agreement unenforceable or invalid, such holding shall not invalidate or render unenforceable any other provision hereof.

UF. Authorization of Agreement.

By the signature of their representatives below, ORM and STA certify that approval of this Agreement by ordinance, resolution or other appropriate means has been obtained by that governmental body's governing body or officer pursuant to SDCL 1-24-3 and 1-24-6, and that the representative is authorized to sign on the party's behalf. A copy of any STA authorizing resolution or ordinance is attached to this Agreement and incorporated herein by reference.

~~[SIGNATURES ON FOLLOWING PAGE]~~

———In Witness hereto the parties signify this Agreement by signatures affixed below:

Mike Headley (Date)
Executive Director
South Dakota Science and Technology
Authority

~~Paul Kinsman~~ ~~Jeff Holden~~
(Date)
~~Acting~~ ~~Commissioner~~
Bureau of Administration
State of South Dakota

1.0 Work Place Safety

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
30 CFR	MSHA
<u>30 CFR</u>	<u>MSHA</u>

2.0 Building Codes

18 USC Chapter 40	Explosives
30 CFR Subpart R	Personnel Hoisting
ANSI Z358.1-2009	Emergency Eyewash and Shower Equipment
ANSI/ASHRAE 62-2004	Ventilation for Acceptable Indoor Air Quality
ASME	Boilers and Pressure Vessel Code, (Sections I through XII including applicable Code Cases)
ASME B31.1 (i)	* Power Piping
ASME B31.2 (ii)	Fuel Gas Piping
ASME B31.3 (iii)	* Process Piping
ASME B31.4 (iv)	Pipeline Transportation Systems for Liquid Components
ASME B31.5 (v)	Refrigeration Piping and Heat Transfer Components
ASME	* Cranes and Hoist Standards
IBC 2009	Building Codes
NFPA 101	Life Safety Code
NFPA 110	Emergency and Standby Power Systems
NFPA 45	Fire Protection for Laboratories Using Chemicals
NFPA 520	Standard on Subterranean Spaces
NFPA 70 B	Recommended Practice for Electrical Equipment Maintenance
NFPA 70 E	Standard for Electrical Safety in the Workplace
NFPA 70	National Electrical Code
NFPA 780	Standard for the Installation of Lightning Protection Systems (and UL86A)
SD Lead City Ordinance	Occupational Noise Exposure
Fermilab Policy	Oxygen Deficiency Hazards (ODH)

3.0 Environmental and Waste Management

10 CFR 1021	National Environmental Policy Act
40 CFR 112	Implementing Procedures
	Spill Prevention, Control and Countermeasure Procedures

40 CFR 260-279	Protection of Environment- Hazardous Waste Management System (Hazardous Waste Regulations)
40 CFR 262.11	Hazardous Waste Determination
40 CFR 273	Standard for Universal Waste Management
40 CFR761	Polychlorinated Biphenyls (PCB)
40 CRF 280	Underground Storage Tanks
40 CFR 302 (CERCLA)	Designation, Reportable Quantities, and Notification
40 CFR 370	Hazardous Chemical Reporting, Community Right to Know
40 CFR 61, Subpart A	National Emissions Standards for Hazardous Air Pollutants
40 CFR 122	NPDES system Guidelines Establishing Test Procedures for the Analysis of Pollutants
49 CFR 171-180	Hazardous Materials Transportation Act
SD Article 12:62	Weed and Pest Control

4.0 SD-DENR: Codified Law

34-44	Asbestos Abatement Training Project
34A-1	Air Pollution Control
34A-2	Water Pollution Control
34A-3A	Safe Drinking Water
34A-6	Solid Waste Management
34A-9	Environmental Impact of Government Actions
34A-11	Hazardous Waste Management
34A-13	Petroleum Inspection and Release Compensation
46-1	Definitions and General Provisions (Water Rights)
46-2A	Administrative Procedure for Appropriate Water
46-5	Appropriation of Water
46-6	Groundwater and wells

5.0 SD Administrative Rule:

74:36	Air Pollution
74:31	Asbestos Control Program
74:50	Compliance Procedures for Water Pollution
74:54	Groundwater Quality
74:28	Hazardous Waste
74:32	Petroleum Inspection and Release Compensation
74:34	Regulated Substance Discharge
74:27	Solid Waste
74:51	Surface Water Quality
74:52	Surface Water Discharge Permits

74:55	Underground Injection Control
74:04	Water Hygiene
74:50	Compliance Procedures For Water Pollution Control
74:53	Water Supply and treatment Systems
74:21	Water Systems Operators
74:02	Water Rights

6.0 Reference Standards

ANSI 31.9-1996	* Building Services Piping
ANSI C2	National Electrical Safety Code
NFPA 10	Portable Fire Extinguishers
NFPA 13	Automatic Sprinklers
NFPA 14	Standpipe and Hose Systems
NFPA 30	Flammable and Combustible Liquids Code
NFPA 55	Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks.
NFPA 72	National Fire Alarm Code

7.0 Additional Standards

The following are a selection of additional trade organizations and standards that may govern the selection and installation of products on the SURF project.

ACGIH Ventilation Manual
Air Movement and Control Association (AMCA)
The Air-Conditioning, Heating, and Refrigeration Institute (AHRI)
American Concrete Institute (ACI) – ACI-318
American Gas Association (AGA)
American Institute of Steel Construction (AISC) – Manual of Steel Construction
American National Standards Institute (ANSI)
American Society for Testing and Materials (ASTM)
American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE)
American Society of Mechanical Engineers (ASME)
American Society of Plumbing Engineers (ASPE)
American Society of Sanitary Engineering (ASSE)
American Water Works Association (AWWA)
Factory Mutual (FM)
Institute of Electrical and Electronics Engineers (IEEE)
Insulated Cable Engineers Association (ICEA)
Manufacturers Standardization Society (MSS)
Mechanical Contractors Association of America (MCAA)
National Electrical Contractors Association (NECA)
National Electrical Manufacturers Association (NEMA)

National Fire Protection Association (NFPA)
National Institute of Standards & Technology (NIST)
National Sanitation Foundation (NSF)
Plumbing & Drainage Institute (PDI)
Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Standards
Underwriters Laboratories, Inc. (UL)
Water Conditioning Foundation (WCF)
Sanford Laboratory Subterranean Design Criteria (EHS-1000-L3-05)

First Amendment to the
Memorandum of Understanding
between
Homestake Visitor Center, Inc. / Lead Area Chamber of Commerce, Inc.
and
The South Dakota Science and Technology Authority
concerning the
Creation and Operation of the Sanford Lab Homestake Visitor Center

March __, 2016

I. Introduction

The parties entered into a Memorandum of Understanding concerning the creation and operation of the Sanford Lab Homestake Visitor Center (“SLHVC”) on May 30, 2014 (the “MOU”).

The MOU provides, in part, that If HVC/LACC ceases to exist or if it wishes to dissolve the partnership with the SDSTA to operate the SLHVC within the mission outlined in Section I of the MOU, then the SDSTA has the option to take ownership of the facility and the property and continue its operation within the overall mission outlined in Section I of the MOU.

The parties desire to clarify the terms of the MOU as it relates to the maintenance of property insurance on the HVC facility and contents and the assignment of the proceeds of any such insurance to SDSTA in the event SDSTA is authorized to, and does in fact, exercise its option under section IV of the MOU. The parties further desire to make certain other amendments to the MOU as provided herein.

- II.** For good and valuable consideration, the receipt and sufficiency of which is acknowledged by each party hereto, the parties agree to and to hereby amend the MOU as follows:

A. Subsection II.C.5 is hereby deleted in its entirety. HVC/LACC hereby acknowledge and agree that no amounts are due to HVC/LACC or any other party on account of said subsection.

B. section IV of the MOU in its entirety to read as follows:

IV. Continuity of Operations

The parties agree to engage in good faith negotiation to resolve any disputes that may arise regarding construction, outfitting, and operation of the Sanford Lab Homestake Visitor Center.

If HVC/LACC ceases to exist or if it wishes to dissolve the cooperative undertaking with the SDSTA to operate the Visitor Center within the mission outlined in Section I, then the SDSTA has the option to take ownership of the facility and continue its operation within the overall mission outlined in Section I. In that event, any property damage insurance proceeds shall be paid over by HVC/LACC to SDSTA. HVC/LACC agree to notify its property damage insurer to make any property damage insurance proceeds jointly payable to HVC/LACC and SDSTA and to provide a copy of that notice to SDSTA.

For so long as HVC/LACC operate the Visitor Center, HVC/LACC agree to insure the Visitor Center building and contents against damage or loss resulting from wind, fire, hail and other causes upon such terms and in such amounts as SDSTA shall reasonably require. HVC/LACC shall provide copies of the full policy, including the declarations page and the notice concerning payment of damage proceeds, each time the policy is renewed, extended or modified.

The parties agree that SDSTA's right and ability to take ownership of and operate the Visitor Center under the conditions set out in section IV gives SDSTA an interest in the Visitor Center and its contents.

This section shall survive termination of this Agreement. The foregoing sentence notwithstanding, if the HVC/LACC outlasts the existence of the SDSTA or its assigns, then this agreement will end in its entirety except the name of the facility will remain the Sanford Lab Homestake Visitor Center.

III. Signatures

The undersigned have agreed to fulfill to the best of their abilities the terms of this Memorandum of Understanding between HVC, LACC, and SDSTA. These signatures confirm that the respective persons signing on behalf of the parties have the legal authority to bind their respective entities.

[SIGNATURES ON FOLLOWING PAGE]

Homestake Visitor Center, Inc.

South Dakota Science and
Technology Authority

By: _____
Billi J. Bierle
Executive Director

By: _____
Mike Headley
Executive Director

(SEAL)

Lead Area Chamber of Commerce, Inc.

By: _____
Melissa Johnson
Executive Director

(SEAL)

PREPARED BY:
Timothy M. Engel
May, Adam, Gerdes & Thompson LLP
PO Box 160
Pierre, SD 57501-0160
605-224-8803

INSTRUMENT OF CONVEYANCE

The undersigned, South Dakota Science and Technology Authority ("SDSTA"), of 630 East Summit Street, Lead, Lawrence County, South Dakota 57754, does hereby quitclaim, transfer and convey title to the personal and real property described below to Homestake Visitor Center, Inc., of 160 W. Main Street, Lead, South Dakota 57754-1362, to-wit:

All educational displays, monuments, memorials, furniture, fixtures, equipment, warranties and guarantees, keys, passwords, and other personal property of any kind or nature whatsoever associated or developed or used in conjunction with the Sanford Lab Homestake Visitor Center.

The building and all related parking facilities, fixtures and infrastructure known as and related to the Sanford Lab Homestake Visitor Center.

The above-described property includes, but is not limited to, The Ray Davis Memorial Ring.

The above-described property specifically excludes any items on loan from any person or entity, including but not limited to any items on loan from Steve Mitchell.

The above-described personal and real property is located at or upon the following described real property situated in Lawrence County, South Dakota:

Lot 2A of Tract 3, Homestake Addition to the City of Lead, Lawrence County, South Dakota, as shown on Plat Document No. 2014-1674 and comprising 0.841 acres, more or less; and

A portion of Tract 2, Homestake Addition to the City of Lead, as shown on that certain Plat recorded in the Office of the Lawrence County Register of Deeds as Plat Document 1994-5906.

This conveyance is without any warranty, express or implied, of any kind or nature whatsoever, except as may be set out in the Memorandum of Understanding by and among SDSTA, Homestake Visitor Center, Inc., and others dated May 30, 2014, as amended, the terms of which shall survive the conveyance provided for herein. IN WITNESS WHEREOF, SDSTA has caused this Instrument to be executed by its Chairman of the Board on the ____ day of _____, 2016.

EXEMPT FROM TRANSFER FEE: 43-4-22(18).

SOUTH DAKOTA SCIENCE AND TECHNOLOGY AUTHORITY

By: _____
Casey C. Peterson
Its: Chairman of the Board

State of South Dakota)
)ss
County of)

I, the undersigned Notary Public, do hereby certify that on this ____ day of _____, 2016, personally appeared before me _____, who being first duly sworn, declared that he is the Chairman of the Board of the South Dakota Science and Technology Authority, and he signed the foregoing document as Chairman.

(SEAL)

Notary Public
My Commission Expires: _____
Notary Print Name: _____

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Contracts – Mr. Mike Headley

Discussion of contracts:

- 7A. Yates Administration Building parking lot repair.
- 7B. Administration Building and Foundry roof repair.
- 7C. Yates hoist motor generator refurbishment.
- 7D. LZ surface radon control system.
- 7E. Discuss loan agreement for additional xenon purchase.

Recommended Action:

- 7A. Motion to authorize the executive director to sign a final contract to repair the Yates Administrative Building parking lot.*
- 7B. Motion to authorize the executive director to sign a final contract to replace the Yates Administrative Building and Foundry roofs.*
- 7C. Motion to authorize the executive director to sign a final contract to refurbish the Yates hoist motor generator.*
- 7D. Motion to authorize the executive director to sign a final contract for the LZ surface radon control system.*
- 7.E Informational*

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Executive Session – Chairperson Casey Peterson

Recommended Action:

Motion to enter into 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

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Review of New and Updated Policies - Mr. Mike Headley / Mr. Tim Engel

ITEM 9. –REVIEW OF SDSTA POLICIES AND PROCEDURES

The following policies are recommended for approval:

- Manual Contents Page (*updated*)
- Policy 2:23 Identity Standards and Style Guide Policy (*new*)
- Policy 3:28 Delegation of Authority-Procurement (*updated; established upper limit on each level of authorization and clarified wording*)

The following procedures are presented for informational purposes only.

- *Procedure 2:23A Identity Standards and Style Guide (new)*
- *Procedure 5.2A Code of Business Ethics and Conduct (updated to include external hotline and third party website address)*

Legal Counsel has reviewed the above listed policies and procedure.

Recommended Action:

Motion to approve updated policies as listed above.

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South Dakota Science & Technology Authority

Policies and Procedures Manual

Table of Contents

Section 1: GOVERNANCE

- 1:1 Authorization
- 1:2 Policies and Procedures

Section 2: ADMINISTRATION

- 2:1 Anti-Harassment
- 2:2 Equal Opportunity and Affirmative Action Employer
 - 2:2A Equal Opportunity and Affirmative Action Procedure
(New March 20, 2015)
- 2:3 Drug & Alcohol Testing
 - 2.3A Drug & Alcohol Testing Procedure
(Updated November 10, 2015)
- 2:4 Security & Site Access
- 2:5 Use of SDSTA-Owned Electronic Equipment, Systems and Protection of Personal Privacy Policy
 - 2.5A Use of SDSTA-Owned Electronic Equipment, Systems and Protection of Personal Privacy Procedure
(New November 18, 2014)
- 2:6 Tobacco-Free Property
 - 2.6A Tobacco-Free Property Procedure
(New November 18, 2014)
- 2:10 Annual Review of Policies
- 2:11 Vehicle Use
 - 2.11A Vehicle Use Procedure
(Updated December 18, 2014)
- 2:13 Open Door
 - 2.13A Open Door Procedure
(New November 10, 2015)
- 2:14 Workplace Violence
 - 2.14A Workplace Violence Procedure
(New November 18, 2014)
- 2:15 Absenteeism and Tardiness
 - 2.15A Absenteeism and Tardiness Procedures
(New September 2, 2014)
- 2:16 Confidentiality
- 2:17 Infectious Disease/Pandemic
- 2:18 Whistleblower
- 2:19 Americans with Disabilities Act (ADA)
- 2:20 Electronic and Radio Communication Devices
- 2:21 Continuity of Operations Plan
- 2:22 Succession Plan
- 2:23 Identity Standards and Style Guide Policy
 - 2.23A Identity Standards and Style Guide Procedures
(New March 1, 2016)

Section 2 RETIRED POLICIES

- 2:7 *Policy Retired-December 18, 2014 (No Solicitation/Distribution)*
- 2:8 *Policy Retired-December 10, 2015 (Permit Certification Logs)*



South Dakota Science & Technology Authority

Policies and Procedures Manual

Table of Contents

- 2:9 *Policy Retired-June 25, 2013 (Board Meeting Minutes to State Auditor)*
- 2:12 *Policy Retired-December 18, 2014 (Employee Privacy)*

Section 3: FINANCE

- 3:1 Accounting and Audit Policy
 - 3:1A Accounting and Audit Procedure
(New March 20, 2015)
- 3:2 Receiving State Contract Money and Reporting Bank Statements to the State Policy
- 3:8 Salary and Hourly Payroll Policy
 - 3:8A Salary and Hourly Payroll Procedure
(Updated June 10, 2015)
 - 3:8B Employer Tax Reporting Procedure
(New March 20, 2015)
- 3:12 Travel Approval and Reimbursement—Employees
 - 3.12A Travel Approval and Reimbursement Procedures – Employees
(New September 9, 2014)
- 3:15 Travel Approval and Reimbursement—Consultants, Contractors and Vendors
- 3:20 Alcohol Policy
- 3:21 Travel Approval and Reimbursement—Board Members
 - 3.21A Travel Approval and Reimbursement Procedures – Board Members
(New September 9, 2014)
- 3:22 Event Expenditure Policy
- 3:24 Telephone Reimbursement Policy
- 3:26 Management and Control of Certain Funds Policy
- 3:27 Conflict of Interest Policy
- 3:28 Delegation of Authority—Procurement
- 3:29 Public Information Policy
- 3:30 Surplus Property Disposal
- 3:31 Record Retention
- 3:32 Federal Awards Costs Allocation Policy
- 3:33 Personal Protective Equipment Reimbursement Policy
 - 3:33A Personal Protective Equipment Reimbursement Procedure
(Updated March 20, 2015)

Section 3 RETIRED POLICIES

- 3:1:1 *Policy Retired-March 20, 2015 (Interest Earned)*
- 3:1:2 *Policy Retired-March 20, 2015 (Capitalization Policy for Capital Assets)*
- 3:1:3 *Policy Retired-March 20, 2015 (Use of Net Assets)*
- 3:1:4 *Policy Retired-March 20, 2015 (Definition of Operating Revenues and Expenses)*
- 3:3 *Policy Retired-March 20, 2015 (Petty Cash)*
- 3:4 *Policy Retired-March 20, 2015 (Invoice and Receipt Policy)*
- 3:5 *Policy Retired-March 20, 2015 (Check Writing and ACH Transfer)*



South Dakota Science & Technology Authority

Policies and Procedures Manual

Table of Contents

- 3:5:1 *Policy Retired-March 20, 2015 (Check and Cash Deposits)*
- 3:6 *Policy Retired-March 20, 2015 (Vendor ACH)*
- 3:7 *Policy Retired-March 20, 2015 (Monthly Account Reconciliation Statement)*
- 3:8:1 *Policy Retired-March 20, 2015 (Overtime Pay)*
- 3:9 *Policy Retired-March 20, 2015 (Quarterly and Yearly Employer Tax Report)*
- 3:10 *Policy Retired-March 20, 2015 (Effort Report – Salaried Employees)*
- 3:11 *Policy Retired-March 20, 2015 (Time Sheet – Hourly Employees)*
- 3:11:1 *Policy Retired-March 20, 2015 (Inconvenience – Call-Out Pay)*
- 3:12:1 *Policy Retired-September 18, 2014 (Travel by Executive Director)*
- 3:12:2 *Policy Retired-September 18, 2014 (Transportation)*
- 3:12:3 *Policy Retired-September 18, 2014 (Lodging)*
- 3:12:4 *Policy Retired-September 18, 2014 (Meals)*
- 3:12:4:1 *Policy Retired-September 18, 2014 (Itemized Ticket for Meal Reimbursement)*
- 3:12:5 *Policy Retired-September 18, 2014 (Reimbursement for Combined Authority and Personal Trip)*
- 3:12:6 *Policy Retired-September 18, 2014 (Travel Reimbursement for Weekend Stays)*
- 3:12:7 *Policy Retired-September 18, 2014 (Travel by State Employees on Authority Business)*
- 3:12:8 *Policy Retired-September 18, 2014 (International Travel)*
- 3:13 *Policy Retired-September 18, 2014 (Commitment for Travel – Authority Employees)*
- 3:14 *Policy Retired-June 25, 2013 (Commitment for Travel – Office of the State Engineer Staff Assigned to Authority)*
- 3:16 *Policy Retired-September 18, 2014 (Commitment for Travel – Other)*
- 3:17 *Policy Retired-September 18, 2014 (Commitment for Travel Expense Form)*
- 3:18 *Policy Retired-March 20, 2015 (Credit Card Use)*
- 3:19 *Policy Retired-March 20, 2015 (Reimbursement for Incidental Related Expenses)*
- 3:23 *Policy Retired-March 20, 2015 (Event and Meal Record Keeping)*
- 3:24:1 *Policy Retired-March 20, 2015 (Cell phone)*
- 3:25 *Policy Retired-March 20, 2015 (Fixed Asset Inventory)*

Section 4: PERSONNEL

- 4:1 Personnel Benefits Policy
- 4:2 Outside Employment and Political Activity Policy
- 4:3 Holidays Policy
- 4:4 Leave Policy
 - 4:4:4 Years of Service and Longevity Pay Policy
 - 4:4:5 Military Active Duty Leave Policy
- 4:5 Employment Policy



South Dakota Science & Technology Authority

Policies and Procedures Manual

Table of Contents

- 4:5A Employment Procedures (*New June 4, 2015*)
- 4:6 Resignation Policy
- 4:8 Workers' Compensation Policy
- 4:12 Progressive Discipline and Termination Policy
- 4:13 Inclement Weather Operations
 - 4:13A Inclement Weather Operations Procedure
(*Updated May 15, 2015*)
- 4:14 Temporary Job Transfer Policy
- 4:15 Worksite Injury Reduction and Management Policy

Section 4 RETIRED POLICIES

- 4:2:1 Policy Retired-June 30, 2015 (*Business Hours*)
- 4:4:1 Policy Retired-June 30, 2015 (*Accumulated Vacation and Sick Leave*)
- 4:4:2 Policy Retired-June 30, 2015 (*Vacation Leave While Traveling on Business*)
- 4:4:3 Policy Retired-June 30, 2015 (*Years of Service*)
- 4:5:1 Policy Retired-June 30, 2015 (*"At Will" Status of Employees*)
- 4:7 Policy Retired-June 30, 2015 (*Training*)
- 4:9 Policy Retired-June 30, 2015 (*Personal References*)
- 4:10 Policy Retired-June 30, 2015 (*Hiring Process*)
- 4:11 Policy Retired-June 30, 2015 (*Moving Allowance*)

Section 5: BUSINESS

- 5:1 Procurement
 - 5:1A Procurement Methods and Thresholds Procedure
(*New May 30, 2014*)
- 5:2 Code of Business Ethics and Conduct
 - 5:2A Code of Business Ethics and Conduct Procedure
(*New December 12, 2013 Updated March 1, 2016*)
- 5:3 Sole Source (Noncompetitive) Procurements
- 5:4 Emergency Procurement
- 5:5 Utilization of Small Business Concerns
- 5:6 Separation of Duties

Section 6: FACILITIES

- 6.1 Underground Personnel Access Control Policy

Section 7: APPENDIX

- 7:1 Agreement in Principle
 - Amendment to Agreement in Principle
 - Property Donation Agreement *sans* Exhibits (Homestake)
 - Amended By-Laws-September 19, 2013
 - Homestake Gift Agreement (Sanford)

South Dakota Science & Technology Authority
Policies and Procedures Manual

SUBJECT: Identity Standards and Style Guide Policy

NUMBER: 2:23

The South Dakota Science and Technology Authority (SDSTA) hereby adopts an Identity Standards and Style Guide (the “Guide”), which is intended to be used for writing and designing documents and enforcing style to improve internal and external communication. The Guide is intended to ensure consistency within a document and across multiple documents in an effort to establish strong identity standards for the Sanford Underground Research Facility.

The Guide is intended to contribute to the professional appearance of all documents and overall communications, serving as a tool to create a cohesive, unified approach that determines how Sanford Underground Research Facility is portrayed throughout the community and to the the world.

The Guide does not apply to scientific papers and journal articles or reports that demand a style consistent with scientific or technical writing standards.

Except as otherwise provided in the Guide, Sanford Underground Research Facility shall follow the Associated Press Stylebook.

See Procedure 2:23A.

Cross Reference: Procedure 2:5A.

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South Dakota Science & Technology Authority
Policies and Procedures Manual

SUBJECT: Delegation of Authority—Procurement Policy

NUMBER: 3:28

- A. The South Dakota Science and Technology (SDSTA) Board of Directors reserves unto itself:
1. The sole authority to approve the annual Operating and Capital Expenditure budget.
 - ~~1.2.~~ The sole authority to authorize the procurement process for any single contract, purchase order or other expenditure of \$5,000,000.00 or more.
 - ~~2.3.~~ The sole authority to ~~authorize the procurement process for~~ accept any single ~~contract or budgeted expense award to SDSTA~~ of ~~\$15,000,000.00~~ or more.
 - ~~3.4.~~ The sole authority to ~~award~~ award any ~~single~~ budgeted ~~contract or purchase order~~ contract, purchase order or other expenditure of ~~\$15,000,000.00~~ or more.
 - ~~4.5.~~ The sole authority to approve ~~and award~~ any ~~single~~ non-budgeted ~~expense contract, purchase order or other expenditure~~ of ~~\$250500,000.00~~ or more.
- B. The Board of Directors delegates the authority to approve other procurement and expenditures as follows:
1. The Chairperson shall have the authority to:
 - ~~a.~~ Authorize the procurement process for any single budgeted ~~contract, purchase order or other expenditure~~ expenditure of ~~\$5002,500,000 or more, but of~~ less than ~~\$15,000,000.00~~.
 - ~~a.b.~~ Accept any single contract or award to SDSTA of less than ~~\$5,000,000.00~~.
 - ~~b.c.~~ Award and execute any ~~single~~ budgeted contract, ~~or~~ purchase order or other expenditure order of ~~\$2,500,000 or more, but less than \$15,000,000.00~~.
 - ~~e.d.~~ Approve, award and execute any ~~single~~ non-budgeted ~~contract, purchase order or other expenditure~~ expense of ~~\$25250,000 or more, but of~~ less than ~~\$250500,000.00~~.
 2. The Executive Director shall have the authority to:
 - ~~a.~~ Authorize the procurement process for any single budgeted ~~contract, purchase order or other expenditure~~ expenditure of ~~\$50250,000 or more, but less than \$2,500,000500,000.00~~.
 - ~~a.b.~~ Accept any single contract or award to SDSTA of less than ~~\$2,500,000.00~~.
 - ~~b.c.~~ Award and execute any ~~single~~ budgeted contract ~~or~~ purchase order or other expenditure of ~~less than \$502,500,000.00 or more, but less than \$2,500,000.~~

- ~~e.d.~~ Approve, award and execute any **single** non-budgeted **contract, purchase order or other expenditure expense** of less than **\$250,000.00**.
3. The Lab Director shall have the authority to:
- a. Authorize the procurement process for any single budgeted expense of **\$10,000 or more, but** less than **\$2550,000.00**.
- a.b. **Accept any single contract or award to SDSTA of less than \$250,000.00.**
- c. Award and execute any budgeted contract or purchase order of **\$10,000 or more, but** less than **\$50250,000.00**.
- b.d. **After consultation with the Chairperson, which consultation shall be documented by the Laboratory Director, exercise the procurement authority of the Executive Director Authorize procurements in place of the Executive Director when the Executive Director is unable to do so approve due to an actual or potential conflict of interest.**
4. Department Directors and managers shall have the authority to:
- a. Authorize the procurement process for any single budgeted expense of less than \$10,000.
- b. Award and execute any budgeted contract or purchase order of less than \$10,000.
- C. All procurement shall take place in conformity with such federal, state, donor-imposed or other competitive bidding and other procurement laws or requirements as may be applicable to the funds and/or contract or purchase order in question. If no such laws or requirements apply, procurement shall be conducted in the manner most advantageous to the SDSTA, price and other factors considered.
- D. **Nothing herein shall prohibit a person with a higher level of authorization to authorize procurements or expenditures within the authority of some other person with a lower level of authorization.**
- C.E. **Contracts, purchase orders and other expenditures may not be arbitrarily divided into smaller contracts, purchase orders or expenditures for the purpose of evading the authorizations provided for in this policy.**
- D.F. Members of the Board of Directors, management and staff shall comply with the SDSTA's Financial Conflict of Interest Policy 3:27 at all times.



South Dakota Science & Technology Authority
Policies and Procedures Manual

SUBJECT: Identity Standards and Style Guide Procedure

NUMBER: 2:23A

The South Dakota Science and Technology Authority (SDSTA) hereby adopts an Identity Standards and Style Guide (the “Guide”), which is intended to be used for writing and designing documents and enforcing style to improve internal and external communication. The Guide is intended to ensure consistency within a document and across multiple documents in an effort to establish strong identity standards for the Sanford Underground Research Facility.

The Guide is intended to contribute to the professional appearance of all documents and overall communications, serving as a tool to create a cohesive, unified approach that determines how Sanford Underground Research Facility is portrayed throughout the community and to the the world.

The Guide does not apply to scientific papers and journal articles or reports that demand a style consistent with scientific or technical writing standards.

Except as otherwise provided in the Guide, Sanford Underground Research Facility shall follow the Associated Press Stylebook.

The Guide shall serve as the procedure as attached. Cross Reference: Procedure 2:5A Used of Company Owned Electronic Equipment, Systems and Protection of Personal Privacy.



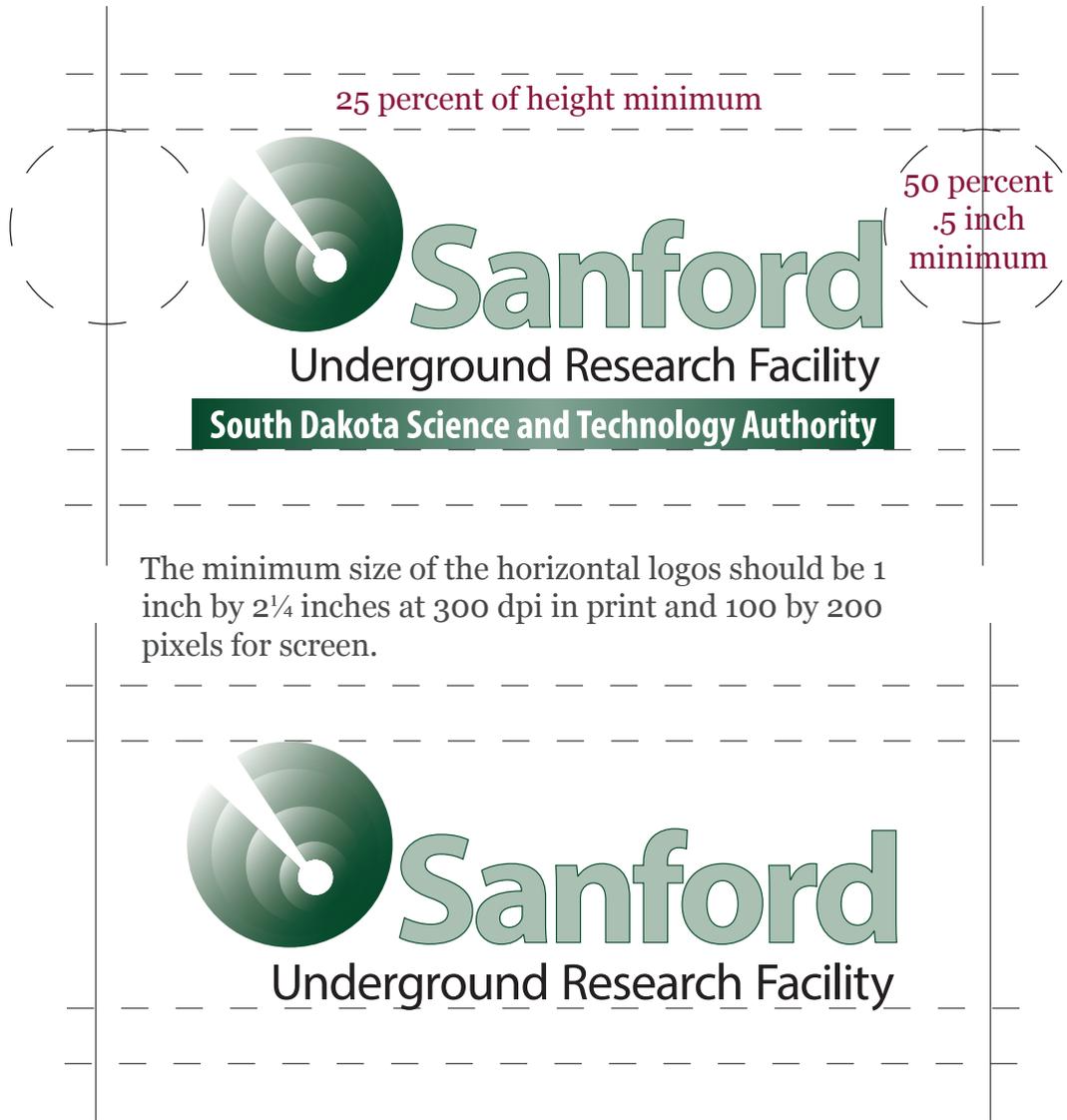
Identity Standards and Style Guide

Table of contents

2—Table of contents	13—Email signatures
3—Introduction	14—Signs
4—Primary logos	15—Stationery examples
5—Approved logos	16—Content formatting
6—Incorrect logo usage	17—Content formatting
7—Legacy logos	19—Writing for clarity
8—Typography	20—Style and grammar
9—Alternative fonts	21—AP Stylebook exceptions
10—Color guide	22—Voice and tone
11—Social media guidelines	23—Commonly misused words
12—Video standards	

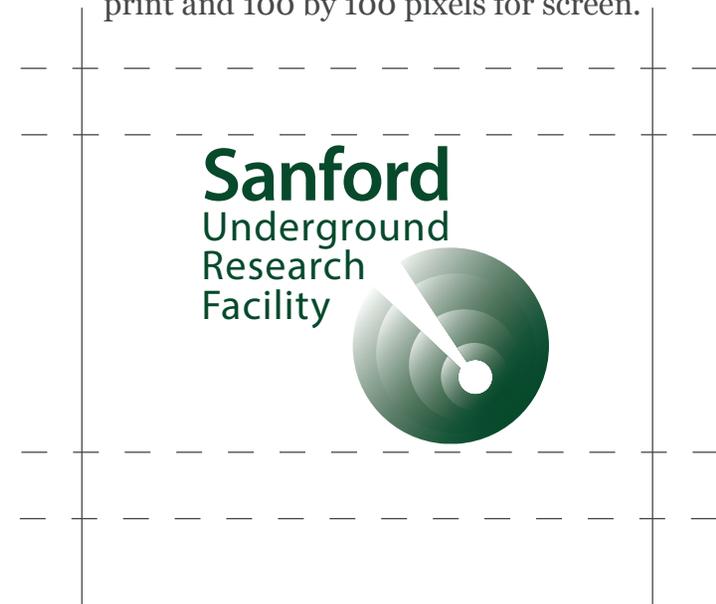
Table of contents

This branding and style guide serves as a tool to help create a cohesive, unified approach in how the Sanford Underground Research Facility is portrayed to the world by staff, partners and collaborators. Our goal in creating this style guide is to provide consistency for all internal and external communications. A strong brand identity allows our stakeholders and others to instantly recognize and associate our brand with the values and mission of Sanford Lab. Sanford Lab follows the Associated Press Stylebook; however, some grammar and writing styles will be addressed to be used in all Sanford Lab communications.



When placing the logo provide adequate white space. Minimum space should be either 50 percent the size of the circle or 1/2 inch on the left and right, and 25 percent the size of the circle or 1/4 inch on the top and bottom.

The minimum size of the square logo should be 1 by 1 inches at 300 dpi in print and 100 by 100 pixels for screen.



Primary logos

Primary logos



Watermarks and icons

OK to resize or lower opacity



One color logo



Alternative 1 horizontal



Black and white horizontal and inverse



Alternative 2 square



Approved logos

Incorrect usage examples



Don't change the color of the logo.



Don't use unapproved fonts with the logo.



Don't place over a busy background.

Don't angle the logo.



Don't distort the logo.



Don't rearrange logo elements or use the icon as a replacement for the logo.



Incorrect logo usage

We want Sanford Lab to be instantly recognized as a world-leading underground research facility. Achieving that goal begins with embracing the logos, identity standards and language of our brand.

Logos that contain a headframe, the name Homestake, DUSEL or SURF create confusion about who we are and, therefore, must not be used in reference to Sanford Lab.

Approved logos can be downloaded at:
www.sanfordlab.org/communications/logos

No longer in use



Legacy logos

Typography should be clear and simple. Body copy or paragraph text is generally arranged left and ragged right. Never justify text. As a general rule, point size should never be less than 10 point; 11-12 point is preferred.

Reserve capitalization for the beginning of sentences, titles and proper nouns.

Choose Myriad or Trebuchet but never both. When using more than one typeface choose typefaces that contrast well. See the next page for font alternatives.

Myriad Pro

Myriad Pro is the font used in the Sanford Underground Research Facility Logo. It can be used for items that are professionally designed or commissioned from external agencies, for example reports, advertising and displays.

Myriad is a readable sans serif font that is modern, stylish and flexible. It can be used in body copy, paragraphs, lists and tables. It can also be used in varying character weights as headings.

AaBbCcDd

Myriad Pro Regular
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
123456789

Myriad Pro Bold
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
123456789

Myriad Pro Bold Condensed
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
123456789

Trebuchet

Trebuchet is a widely available sans serif typeface. It is packaged with Windows, Mac and Linux operating systems. Trebuchet comes in standard line weights. It is also considered a web-safe font.

AaBbCcDd

Trebuchet Regular
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
123456789

Trebuchet Italic
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
123456789

Trebuchet Bold
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
123456789

Georgia/Times

Georgia typeface should be used where a serif font is required; for example, in lengthy reports, brochures, press releases and news articles. Serif fonts are generally considered to be more readable and traditional. Times or Times New Roman may be substituted in cases where Georgia is not available. Georgia and Times are both standard web fonts.

AaBbCcDd

Georgia
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
123456789

Georgia Bold
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
123456789

Georgia Bold Condensed
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
123456789

Using decorative fonts

Decorative or script fonts should be reserved for special projects such as posters, certificates or event fliers. Avoid using them in presentations, emails and other business documents. Avoid using more than one decorative font in the same project. Choose decorative fonts that contrast well with the primary font.

Preferred colors

PRIMARY LOGO PANTONE 350 CP #00492C	PRIMARY LOGO PANTONE 5645 CP #A9BFB2	PANTONE 7697 CP #3D8AED	PANTONE 7638 CP #88163D	PANTONE 1225 CP #AF7345	PANTONE 7581 CP #703B23	GRAPHITE #484949
C 90 M 42 Y 90 K 48 R 0 G 73 B 44 H 210 S 78 B 38	C 35 M 15 Y 31 K 0 R 169 G 191 B 178 H 144 S 11 B 178	C 70 M 43 Y 0 K 0 R 61 G 138 B 237 H 213 S 74 B 92	C 32 M 100 Y 61 K 28 R 137 G 22 B 62 H 338 S 83 B 53	C 0 M 22 Y 77 K 0 R 255 G 201 B 86 H 39 S 66 B 100	C 33 M 79 Y 91 K 36 R 124 G 59 B 35 H 15 S 71 B 48	C 67 M 59 Y 58 K 40 R 72 G 73 B 73 H 179 S 1 B 28

Color guide

These guidelines are intended to help employees and stakeholders who use social media on behalf of Sanford Lab. Social media is a great way to engage a large audience, but there are ways to do it well—and not so well. The guidelines also help those associated with Sanford Lab who are using social media as an individual but representing Sanford Lab in some way.

Social media sites



- Add value. Make sure your social media posts add to the conversation. Stick to your area of expertise and provide unique perspectives on what’s going on at Sanford Lab and around the world.
- Do us proud. Sanford Lab-branded social media is an extension of the Sanford Lab “voice.” Posts should reflect Sanford Lab’s values.
- Have a conversation. Talk to your followers as you would to real people in professional situations. Avoid overly pedantic or composed language. Bring in your own personality. Consider content that invites response.
- Be transparent. If you are posting about your work at Sanford Lab, use your real name, clarify that you work for Sanford Lab and be clear about your role. If you’re posting on behalf of a department or facility, make sure it is clearly stated.
- Think before you post. There is no delete button on the Internet and social media is about as public a stage as you can find. If it gives you pause, pause.
- Make a mistake? If you make a mistake, admit it. Be upfront and be quick with your correction.
- Play nice. Be respectful and considerate. Don’t get into an argument with followers.
- Know what NOT to post. If you are unsure, ask the source of the information. All statements must be true and not misleading. Never comment on anything related to legal matters, litigation or any parties with whom we are in litigation. Respect proprietary information, content and confidentiality.
- Leave crisis communication to the Communications Office. This prevents confusion and misleading information. Don’t release information about emergencies in your social networks.

Sanford Lab respects different opinions and hopes to foster dialogue through our social media presences. However, comments on social media sites managed by Sanford Lab Communications Office may be removed if they:

- Contain obscene, indecent or profane language;
- Contain threats or defamatory statements;
- Contain hate speech directed at race, color, sex, sexual orientation, national origin, ethnicity, age, religion or disability;
- Contain sensitive or personally identifiable information;
- Are completely out of context.

Sanford Lab administers video accounts on YouTube and Vimeo. Videos that will be played to a broad audience including the public, for training purposes or at the Sanford Lab Homestake Visitor Center should follow these guidelines.

- Videos should be professionally produced. For example: <https://vimeo.com/125617383>
- Third party video should always be linked to—not downloaded.
- Create a play list on YouTube to organize multiple videos for an event or for training. Example: https://www.youtube.com/playlist?list=PLh7LC5geWXGHR1FtH7o_DBCWofxwfAd9X
- Ask for help. The Communications Office can help create videos, put them on line and build play lists.
- Videos for internal use only can be password protected on Vimeo.

<https://www.vimeo.com/sanfordlab>

<https://www.youtube.com/user/SanfordLaboratory>



Examples of acceptable video

Lectures or presentations with topics that relate to the work and mission of Sanford Lab.

Videos that illustrate a complicated scientific or engineering process.

Videos that aid in the training of employees, researchers and other visitors to Sanford Lab.

All video must be reviewed by the Communications Office before it is posted on line.

Video standards

Consistent email signatures deliver a visually coherent look across departments and offices. Just as our business cards follow a standardized approach, so, too, should email signatures. Consider your email signature your digital business card. Email signatures should include:

- Your name/professional designation
- Job title
- Department or office Phone number
- Fax number (if applicable)
- Postal address
- Mobile number (if applicable)
- Sanford Underground Research Facility
- Website addresses

Guidelines on email signatures

- Personal quotations, tag lines or philosophical statements should not be included as part of your signature.
- Watermarked, colored or photographic backgrounds and other images including logos in emails should not be used.
- Images, including logos, are not always recognized by email clients and may come through as attachments, which could cause your message to be flagged as spam.
- Preferred font and size: Myriad Pro 10 point.
- Your email address is already included in every email and does not need to be in the signature.
- It is not necessary to include a detailed signature when sending a reply
- You may include a confidentiality statement when applicable.
- For informal messages or replies it is not necessary to include a full signature.
- The color green (see color guide) may be used on the company name.

Example email signatures

FirstName LastName
Job Title
Department Name
Sanford Underground Research Facility
630 E. Summit St. Lead, SD 57754
phone: 605.555.5555
mobile: 605.555.5555
www.sanfordlab.org

Name | Job Title | Department | **Sanford Underground Research Facility** | 630 E. Summit St. Lead, SD 57754 | ph. 605.722.8650 | mobile: 605.555.555 | www.sanfordlab.org

Email signatures

Message signs

Authorized Personnel Only — Bold heading

Public tours and information are available through the
Sanford Lab Homestake Visitor Center
160 West Main Street (at the Open Cut) — Regular body text

Delivery information: call (605) 722-8650 — Optional 1 line bold

 — Horizontal logo

Administration Building (605) 722-8650 — Main phone number

South Dakota Science and Technology Authority — SDSTA banner

Signs located on property must follow branding guidelines and these basic templates. The overall size of the sign will determine the size of the elements on the sign. Signs must be ordered through the Communications Office.

Branding does not need to apply to safety signs which follow ANSI standards.

Property signs

 — SanfordLab/SDSTA logo

Sanford
Underground Research Facility

South Dakota Science and Technology Authority

Surface Laboratory — Location label

650 Ellison Street — Address if applicable

Administration Building (605) 722-8650 — Main phone number

Signage may include the logo of a partnering institution. Additional logos are not to exceed the height or width of the Sanford Lab logo.

 **Sanford**
Underground Research Facility

South Dakota Science and Technology Authority

 **Black Hills**
Underground Campus

Signs



Letterhead, presentations, and memo templates are available at (URL TO FOLLOW)
 Any materials designed to promote Sanford Lab must be approved through the
 Communications Office.

Letterhead



Business Card



Stationery examples

Paragraphs

Use consistent paragraph formatting. Indent paragraphs or use a space after each paragraph, but not both.

Paragraphs in this style guide use the space after.

Lists

Use bullets or numbered lists that are indented to the right of paragraphs. List items should have adequate space between them. Multi-line list items should be aligned left. Example:

- This is a bulleted list
- This is a multiline list item. Note how it is right aligned with the lines above.
- Note spacing between list items
- Don't indent your bulleted or numbered multilined lists like this.

Hyphens and dashes

Do not mistake hyphens (-) for the wider en dash (–) or the even wider em dash (—).

The hyphen's primary function is the formation of certain compound terms. The hyphen is also used for word division at a line break.

The en dash (–) is used to represent a span or range of numbers, dates or times. There should be no space before or after the en dash. Depending on the context, the en dash is read as “to” or “through.”

The em dash (—), depending on the context, can take the place of commas, parentheses or colons—in each case to slightly different effect. There is no need for a space before or after an em dash. Substitution of two adjacent hyphens (--) is considered poor practice.

Hyphens -

- eye-opener, check-in, free-for-all
- The house comes with a state-of-the-art security system.
- At the end of this sentence is a hyphenated line break.

En dash -

- The 2010–2011 season was our best yet.
- The professor holds office hours every Wednesday, 11:00 a.m.–1:00 p.m.
- BHSU beat SDSMT 28–14 in the final game of the regular season.
- There is a north–south railway in that area.

EM dash —

- When the car was finally delivered—nearly three months after it was ordered—she decided she no longer wanted it.
- Upon discovering the errors (all 124 of them), the publisher immediately recalled the books.
- Upon discovering the errors—all 124—the publisher immediately recalled the books.
- The jurors reached a unanimous verdict—guilty.

Content formatting

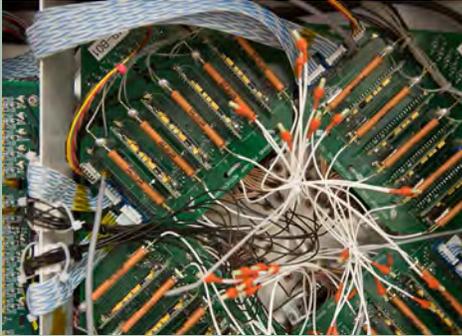
Image resolution

- Image resolution is measured in pixels per inch (ppi).
- Generally use 72-150 ppi for on screen and 240-300 ppi for print use.

Photographs, images, figures and text boxes

- Always ask the owner's permission to use photographs. (Permission is not necessary from the Sanford Lab photo gallery—pics.sanfordlab.org).
- In general, don't put text over an image. Use text wrapping and margins.
- Write captions for all images.
- Give credit to the creator and/or the institution.
- Use padding (inset space) around text boxes that have a background or a border.
- Use links to original photos for use in social media and on the web.

Margin —



Caption and credit —

This is a caption for the above image.
Photo by: Photographer Name/institution.

Padding —

This is dummy text to illustrate a properly formatted image.

Musam seque vendi conse officia niet, nihit ut andit lant eos ist fuga. Est, omnihillaut ea nonem utae quuntur, consed que res peliqui sitem doluptatusae ma non et modiore placepta dolorepro tesed que ex et quo verferae nulluptur sequiasit et iuntur aciam autem vel exceperspel ipis es ad ma si officil ipsum illaborum fugiasp Ximus moluptis ex exces as nimpost et enimpero

Writing and grammar

We write for a diverse audience about complex science experiments, so it's important to make our content—whether a newsletter, web article or social media post—accessible to everyone. That's not easy when writing about esoteric physics concepts. When developing content always consider the following:

- Science writing can be challenging. Before you begin writing about a topic, make every effort to understand it. Don't use jargon. Instead, use simple sentences and familiar words. The language you choose encourages readers to read on or give up altogether.
- Treat your readers with respect, putting yourself in their shoes. Before you begin writing ask yourself: What purpose does this serve? Who is going to read it? What do they need to know?
- Sanford Lab's mission focuses on education. Give your readers the information they need, not just what you want them to have. This offers opportunities for them to learn more.
- Write in a conversational way—just as you would face-to-face—adapting your tone to the audience and content.
- Don't be afraid to have fun or break a few writing rules. When you make science more “human,” you make it more accessible to your readers.

Technical paper

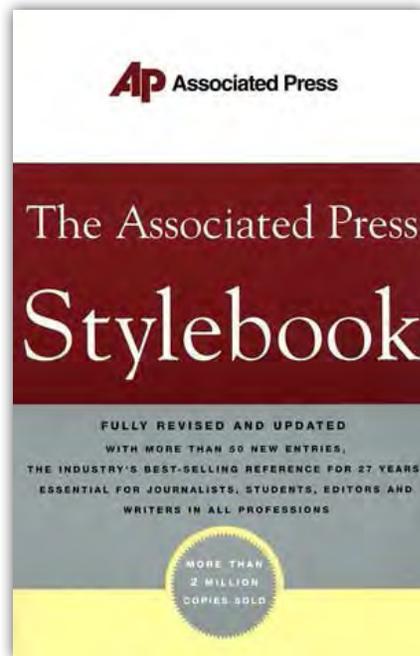
We present constraints on WIMP-nucleus scattering from the 2013 data of the Large Underground Xenon (LUX) dark matter experiment, including 1.4×10^4 kg days of search exposure. This new analysis incorporates several advances: single-photon calibration at the signal wavelength; improved event-reconstruction algorithms; a revised background model including events originating on the detector walls in an enlarged fiducial volume; and new calibrations from decays of an injected tritium source and from kinematically-constrained nuclear recoils down to 1.1 keV energy. Sensitivity, especially to low-mass WIMPs, is enhanced compared to our previous results which modeled the signal only above a 3 keV minimum energy and which imposed higher threshold pulse sizes.

Plain(er) English

The Large Underground Xenon (LUX) experiment already is the most sensitive dark matter detector in the world. Now, a new set of calibration techniques has again dramatically improved its sensitivity. Researchers are looking for weakly interacting massive particles, or WIMPs, which are among the leading candidates for dark matter.

Scientists used neutrons as stand-ins for dark matter particles. Bouncing them off the xenon atoms allows scientists to see how LUX responds to the recoiling process. They also injected methane and krypton, both radioactive gases, to help them better distinguish between signals produced by ambient radioactivity and a potential dark matter signal.

Sanford Lab follows the Associated Press Stylebook in all of its publications. The purpose of this guide is to address common questions; it is not intended to be comprehensive. If you have questions, please contact the Communications Office, or refer to the AP Stylebook.



- *Avoid slang and jargon.* If your readers don't understand what you're saying, they won't stay with you. If you must use technical terms, define them.
Example: He walked through the drift, which is a tunnel underground that has no surface opening.
- *Write positively.* Use positive language rather than negative.
Example: The report will not be ready until Monday.
The report will be ready Monday.
- *Acronyms.* On first reference, give the full name of any experiment or project. On second reference, approved acronyms may be used. A list of acronyms can be found here: <https://docs.sanfordlab.org/docushare/dsweb/Get/Document-94659/Acronym%20List%202016-0111.pdf>
Example: Large Underground Xenon experiment uses the acronym LUX.
- *Capitalization.* Avoid unnecessary capitals. Formal titles when used immediately before full names are capitalized. Use lower case when set off with commas. We capitalize all job titles and the names of our collaborative and partner institutions. The full name of a department is always capitalized, as are all proper nouns.
Example: the Communications Office, but communications is lowercase.
- *Numbers.* Numbers from one to nine are always spelled out (see AP Stylebook). For numbers 10 and above, use numerals.
One, two, three,... nine, 10, 11, 12...100,... 2 million... 3 trillion.
- *Serial comma.* We do not use a comma before the word and or in a list. However, there are exceptions. Use commas to separate elements in a series, but not before the conjunction in a simple series: The flag is red, white and blue. Use a comma in a complex series of phrases: I had orange juice, toast, and ham and eggs for breakfast.
- *Periods.* Use one space only after periods.
- *Use active voice when possible.* Passive voice can quickly put your readers to sleep.
Example: She walked to the laboratory through a long, dark drift. Passive: She had walked through the tunnel to get to the laboratory.

Style and grammar

Sanford Lab makes the following exceptions to the AP Stylebook.

- Research and technical papers do not need to follow AP Style.
- Capitalize official department/office names. For Example: Communications Office and Engineering Department.
- Capitalize job titles before names but not after. For example: Communications Director Constance Walter or Constance Walter, director of communications.
- Cleanroom is a compound word when referring to a laboratory.

What’s the difference between voice and tone? You always have the same voice, but your tone changes. You might use one tone when out with friends, but a very different tone in a meeting at work.

Voice and tone

- Sanford Lab’s priority in developing content is to educate our readers and to help them understand complex concepts. Our voice is friendly, familiar and straightforward. We want to educate without patronizing or confusing them.
- Sanford Lab’s tone changes, depending on the audience. When writing, consider your audience. Are you writing for the general public? The science community? College students? The Board of Directors? When you understand your audience, you can determine how formal you need to be. But you should always make your writing interesting, precise and clear. Note the difference in tone between the two example paragraphs.

Voice—press release

Every Dec. 10, the Nobel Foundation presents the Nobel Prizes at an elaborate event in Stockholm, Sweden. This year, the Sanford Underground Research Facility (Sanford Lab) will join the celebration with its first “Nobel Day.” The event, presented in conjunction with the Sanford Lab Homestake Visitor Center, will be held Thursday, Dec. 10, at the Visitor Center, 160 W. Main St., in Lead, S.D.

Tone—story

In the movie “Shrek,” the title character tells Donkey, “Ogres are like onions!... They have layers.” Vince Guiseppe uses the same analogy to describe the MAJORANA DEMONSTRATOR shield.

Tone—invitation

The South Dakota Science and Technology Authority (SDSTA) and Sanford Lab Homestake Visitor Center cordially invite you to attend the Grand Opening and Ribbon-Cutting Ceremony for the new Visitor Center on June 30, 2015, from 11 a.m. to noon. The Grand Opening will take place at the new building located at 160 W. Main St. in Lead, S.D. The public is invited to this event and light refreshments will be served.

Voice and tone

Some commonly confused words. The correct usage can be found in the AP Stylebook or by requesting assistance from the Communications Office.

- Affect or effect
- Already or all ready
- Alternate or alternative
- Among or between
- Because or since
- Because of or due to
- Can, may, or might
- Comprise, compose, constitute
- Continual or continuous
- Discrete or discreet
- E.g. or i.e.
- Ensure, insure, assure, or make sure
- Farther or further
- If, when, or whether
- Last or past
- Lay or lie
- Less than or fewer
- More than or over
- Principal or principle
- That or which
- Who or whom
- Stationary or Stationery

As always there are exceptions, but in general try to avoid using words that promise something you can't deliver or prove.

- Best, strongest, ideal, perfect
- Ensure
- It is, there are
- Partner, partnership
- Recent
- Safe
- The only
- This, that, these, those
- Unique
- Us, them



South Dakota Science & Technology Authority Policies and Procedures Manual

SUBJECT: Code of Business Ethics and Conduct Procedure

NUMBER: 5:2A

The South Dakota Science and Technology Authority (SDSTA) is committed to fair, ethical and professional behavior in all of its dealings. The Code of Business Ethics and Conduct Program is established for all SDSTA employees and incorporates existing SDSTA policies and procedures. Principally, this program is composed of the Code of Business Ethics and Conduct, an ongoing employee awareness program, and an internal control system which enables employees to report suspected violations of this policy and ensures corrective measures are promptly instituted and carried out, as required by the Federal Acquisition Regulation (FAR) 52.203-13.

A. The SDSTA Code of Business Ethics and Conduct incorporates and is composed of the following:

1. The Code of Conduct set forth in the Employee Handbook;
2. The SDSTA Policies and Procedures Manual;
3. The SDSTA Procurement Policies and Procedures Handbook - Business Services Department;
4. The SDSTA Accounting Manual; and
5. The SDSTA Environment, Health and Safety Manual.

B. Applicability

All SDSTA employees, officers, directors, managers, volunteers, contractors, and agents are required to comply with these standards, together with applicable local, state and federal laws and any applicable grant and contractual requirements. As an SDSTA employee, any actions that you take in the course of your day-to-day activities and in relationships with customers, suppliers, contractors and others is expected to be fully justifiable, to promote fair and open competition for contracted work, and not to be a cause for concern or bring unfavorable publicity or embarrassment to SDSTA if disclosed. These standards apply to your conduct both on and off the job. You are expected to avoid and report unethical actions, improper conduct, and conflicts of interest.

C. Code of Business Ethics

Members of the SDSTA community are expected to conduct themselves ethically, honestly and with integrity in all dealings, governing our conduct with others both inside and outside the SDSTA community with the principles of fairness, good faith and respect consistent with laws, regulations and SDSTA policies.

SDSTA employees shall:

1. Reject any plan, transaction, or arrangement involving unlawful conduct;
2. Avoid any arrangement, agreement, investment, employment, relationship, act, or interest that is, or appears to be, contrary to the best interests of SDSTA or its customers, or that in any way might impair the objective performance of duties or the exercise of independent judgment or action with respect to the interests of the SDSTA or its customers;
3. Protect and maintain the security of confidential, proprietary, and privileged information related to the SDSTA or associated with its activities, including financial data related to operations of the SDSTA. Such information includes that furnished by customers, suppliers, contractors, or others under conditions of confidentiality; and
4. Provide professional and impartial opinions and judgments and act in accordance with the best interests of the SDSTA and its customers.

D. Code of Conduct

Because there may not always be existing regulations or standards to guide every situation, you are expected to exercise sound judgment and display professional behavior in the day-to-day performance of company business. SDSTA employees shall:

1. Treat others with respect and dignity – your co-workers, clients, vendors, and all others with whom you interact on behalf of the SDSTA;
2. Maintain a safe workplace to protect and preserve the well-being of SDSTA staff, the public, and the environment;
3. Become familiar with and comply with the laws, regulations, and contractual obligations, policies, procedures, and professional standards governing the SDSTA's business;
4. Be honest in your communications, activities, and relationships. All business information and records must be accurate and complete. Failure to provide complete information is just as unacceptable as providing false information;
5. Maintain the confidentiality of the sensitive information of the SDSTA and those with whom SDSTA conducts business;
6. Respect the intellectual property rights of others and report promptly all inventions and intellectual property developments to appropriate SDSTA personnel; and
7. Cooperate with government agency officials whenever an audit, investigation or corrective action is being pursued.

E. Conflicts of Interest

In addition to the requirements of SDSTA Policy 3:27 Financial Conflict of Interest, Article IV (C), employees shall:

1. Avoid actual conflicts of interest, or the appearance of a conflict, including those that may arise between your SDSTA responsibilities and your personal activities and relationships. If a conflict arises, disclose it to your supervisor or Human Resources Administrator immediately.
2. Never request or accept any gratuity, gift or special favor from individuals or organizations with whom SDSTA is doing business or proposing to do business. Items of nominal value (under \$20, or \$50 a year per source) such as logo or promotional advertising novelties routinely used by vendors to market their businesses to the public, or refreshments or meals in connection with attendance at professional meetings or events sponsored by businesses or associations, are not considered gifts and may be accepted. However, employees should exercise discretion in accepting invitations or wearing logo items where they could create the appearance of a conflict of interest;
3. Refuse services, loans of equipment, or work performed outside SDSTA's contractual obligation which may be offered;
4. Avoid giving, offering or promising anything of value to any actual or potential subcontractor or subcontractor employee, directly or indirectly, which could possibly incur an obligation. The solicitation, acceptance, or attempt to accept a "kickback" or bribe are specifically prohibited;
5. Not make unauthorized business commitments;
6. Comply with established delegations of authority; and
7. Disclose in writing any situation, transaction, or relationship that might give rise to an actual or potential conflict of interest to your supervisor, or as described in Section G.

F. Employee Awareness Program

The SDSTA Code of Business Ethics and Conduct Program will foster ongoing awareness to assist employees in the implementation and performance of the Program. All employees shall:

1. Receive annual reminders of their duty to comply with the Code of Ethics and Conduct Program;
2. Attend mandatory annual training sessions;
3. Have access to an ethics hotline to ask questions or raise concerns about suspected or actual compliance or business ethics issues; and
4. Be assured those raising questions and/or concerns in good faith are protected against retaliation.

G. Internal Control System

To ensure program effectiveness, the SDSTA will establish an internal control system that facilitates timely discovery of improper conduct in connection with Government contracts and ensures corrective measures are promptly instituted and carried out. The SDSTA's internal control system shall:

1. Provide periodic reviews of SDSTA business practices, procedures, policies, and internal controls for compliance with this Code of Business Ethics and Conduct and the special requirements of Government contracting;
2. Establish an SDSTA Ethics Hotline (*605-722-8650 extension 314*) available 24/7 to ask questions or raise concerns about compliance or business ethics;
3. Provide instructions that encourage employees to report suspected instances of improper conduct by speaking to their supervisor, manager, Human Resources Administrator, or the Laboratory Director or contacting the SDSTA Ethics Hotline (*605-722-8650 extension 314*) and ensure that reporting employees are protected from retaliation;
4. Conduct internal and external audits, as appropriate;
5. Take disciplinary action for improper conduct, up to and including termination; and
6. Report violations promptly to the Executive Director, who will determine whether a formal report to the SDSTA Board of Directors and/or a federal agency sponsor is warranted.

When unsure whether an action complies with the SDSTA Code of Business Ethics and Conduct, ask yourself:

- Is the action legal?
- Is the action ethical?
- Does the action comply with or contradict SDSTA policy?
- Does this action appear inappropriate?
- If it became known, would this action result in embarrassment within or outside the SDSTA or our funding agencies or mission partners?

H. External Control System

For serious matters that cannot be resolved through the internal control system or advanced through the normal chain of command, employees may file a report externally through any of these methods:

1. Toll-Free Telephone:
 - English speaking USA and Canada: 844-280-0005
 - Spanish speaking USA and Canada: 800-216-1288
 - Spanish speaking Mexico: 01-800-681-5340
 - French speaking Canada: 855-725-0002
2. Website: www.lighthouse-services.com/sanfordlab
3. E-mail: reports@lighthouse-services.com (must include company name with report)
4. Fax: (215) 689-3885 (must include company name with report)

SDSTA's legal and ethical obligations go far beyond what is included in this Code of Business Conduct and Ethics. The SDSTA employees must comply with both the letter

and the spirit of the many laws and regulations that affect the way the SDSTA does business. The responsibility for meeting our legal and ethical obligations, however, cannot be fully defined or guaranteed by any set of written rules. There will be times when the best course of action can only be recognized by ensuring our actions are consistent with SDSTA's values and ethics. In the end, confidence must rest on the honesty, integrity and good sense within each of us.

Nothing in this policy is intended to contradict or supersede applicable federal, state or local law.

If you have questions about any matter of compliance or ethics, whether covered by this Code or not, consult with your supervisor, manager, Human Resources Administrator, or the Laboratory Director, or call the SDSTA Ethics Hotline at *605-722-8650 extension 314* to request assistance.

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2016 Legislative Update – Mr. Tim Engel

Recommended Action:
Informational

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SDSTA employees leaving to work for SDSTA Vendors – Mr. Tim Engel

Recommended Action:
Informational

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Select Nominating Committee – Chairperson Casey Peterson

Recommended Action:

None

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Confirm date and time of next meeting – Chairperson Casey Peterson

The next board meeting (annual) will be held on June 16, 2016 beginning at 9:00 A.M. (MT).

2016 Board Schedule	
March 17, 2016	9:00 am (MT)
June 16, 2016	9:00 am (MT)
September 22, 2016	9:00 am (MT)
December 15, 2016	9:00 am (MT)

Meeting location:

*SDSTA/Sanford Underground Research Facility
630 E. Summit Street, Lead SD 57754
Administration Building/2nd Floor Vault
Please contact Mandy Knight for further questions.
Direct Line: 605.722.4022, Cell: 605.641.0475*

Recommended Action:

None

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Board Comments – Chairperson Casey Peterson

Recommended Action:

None

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