2025-05-13

Case Study on Communication at SNOLAB for a Project Involving an Experiment, Contractors and SNOLAB Personnel

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Project Engineer, SNOLAB

Outline

- Introduction
- Communication Channels & Coordination
- Pre-Task Planning & Requirements
- Safety & Compliance Considerations
- Execution and Real-Time Communication with Multiple Stakeholders

Introduction

- Task: Weld the PICO-500 pressure vessel underground at SNOLAB
- Key Stakeholders:
  - **SNOLAB:** Location of the experiment and work
    - Project Manager, Project Coordinator, Technical Services
  - **PICO:** Experiment who purchased the pressure vessel
    - Project Leader, Engineers
  - **SAS:** Vendor who made the pressure vessel parts
    - Owner, Site Supervisor
  - **Cast:** Subcontractor that performs underground welding
    - Site Supervisor, Welders, Fitters
  - **NATT:** Sub-subcontractor for confined space activities
    - Attendant, Rescuers

Communication Channels & Coordination

Communication Channel	Team Access				
	SNOLAB	PICO	SAS	Cast	NATT
SharePoint	✓	✓			
Slack	✓	✓			
Email	✓	✓	✓	✓	✓
PV Construction Meeting	✓	✓	✓	✓	
PICO-500 Project Management Meeting	✓	✓			
PICO-500 Operations Meeting	✓	✓			

Pre-Task Planning & Requirements

Work Plan – 47 Pages

CAST JOB 22-076

SNOLAB

PICO 500 PRESSURE VESSEL

DESCRIPTION OF THE WORK PLAN

REVISION: 9

Cast Construction Inc.

Innovative construction

Strength. Performance. Passion.

Training

Date	Name	A	B	C	D	E
5/2/2025	Company	SAS	Cast	Cast	Cast	NATT
	Contractor #					
Training	Needed ?					
Vale Tier 1	All	3/6/2025	8/23/2025	12/19/2024	8/7/2026	7/11/2024
Vale Tier 2 Mines	All	8/21/2026	1/22/2025	9/6/2025	3/28/2025	6/25/2025
Vale Tier 3 Creighton	All	8/21/2026	9/19/2025	9/1/2025	9/4/2025	9/6/2025
WHMIS	All	8/24/2025	1/6/2024	3/27/2024	11/16/2023	7/11/2024
Vale Environmental Awareness	All	8/27/2030	8/27/2030	8/27/2030	8/27/2030	8/27/2030
VAR CAR 1-5	All	8/27/2030	8/27/2030	8/27/2030	8/27/2030	8/27/2030
SCSR	All	8/25/2025	4/11/2024	9/2/2024	11/17/2023	2/26/2024
ZES Tagger	All	8/28/2025	1/14/2025	6/17/2025	8/7/2025	5/31/2025
SNOLAB SST UG	All					
SNOLAB SST In-Person UG	All					
SNOLAB Critical Policies	All					
SNOLAB SST Surface	All					
My SDS	All					
Scaffold Awareness Training	Scaffold Users					
Overhead Crane and Rigging	Crane Users					
Confined Space Entry	CS Entrants		9/20/2025	11/9/2023	9/13/2025	7/11/2026
Confined Space Attendant	CS Attendants					7/11/2026
Confined Space Rescuer	CS Rescuer					7/11/2026

Pre-Task Planning & Requirements

SNOLAB Installation Readiness Review

2019A-PICO-500 PV Welding IRR3 Agenda

Date and Time: Jan 7, 2024 (9:00 – 1:00) EST (4 hours)
Teams Meeting Link: Join Teams
Documentation Repository: https://www.snolab.ca/docushare/dsweb/View/Collection-11296

REVIEW COMMITTEE: SNOLAB

Pierre Gorel (Chair)	Jodi Cooley (EO)	Stephen Sekula (PANDIV)
Mehwish Obaid (PMO)	Jeter Hall (EO)	Genna Howard (OPS)
Sushil Thakre (EHS)	Paul Larochelle (ENG)	Aleksandra Bialek (Cleanliness Coordinator)
Kirk Risto (TS)	Erica Brunelle (Research Admin)	
Richard Ford (EO)	Luc Whipple (JHSC)	

PROJECT REPRESENTATIVES AND PARTICIPANTS: PICO-500 & SNOLAB

Paul Grylls	Christian Gaudreau	Nancy Trottier (CAST)
Koby Dering	Jonathan Corbett	Lee MacIsaac (CAST)
Mahmoud Seyedi	Peter Liimatainen	
Ian Lawson	Stephen Stankiewicz	
Ashley Mathewson	Rejean Castilloux	
Roxanne Fournier	Doumer Horace (SAS)	
Carsten Krauss	Brian Morissette (SAS)	

(*) unable to attend

AGENDA DAY ONE – Jan 7th

Timeline	Activity
9:00-9:30	Committee in Camera (Pierre)
9:30-10:15	Installation Plan/Welding Procedure (Koby)
10:15-10:30	Cleanliness Plan (Paul)
10:30-10:50	Safety Documents (Paul & Koby)
10:50-11:00	Suspension: PICO Updates (Koby)
11:00-11:30	Suspension: TDR-R-03 Closeout (Mahmoud)
11:30-11:45	Charge Letter Response (Paul)
11:45-12:45	Committee in Camera (Pierre)
12:45-1:00	Closeout (Pierre)

- 22-076 Sno Lab Pico 500 Pressure Vessel THA R4 2024-12-02
- THA-346 - PICO-500 - PV Weld - Cleaning and Passivation_Rev_2 - April 3, 2025
- PICO-PFH-DET-2008 Rev 0 - PICO-500 PV Pickling Containment Plan
- PICO-500 Welding Schedule Dec 2024
- PICO-500 Welding Schedule
- 2022-10-12 - Steel 2000 - Lifting Lugs - NDT NIS (5814)
- PV Welding Contractor Training Matrix
- Cast Confined-Space-Hazard-Assessment-Form R3 2024-12-02
- 22-076 - SAS SNOLAB PICO 500 Pressure Vessel Rescue Plan R5 2024-12-02
- PICO-PFH-DET-2007 Rev A - PICO-500 PV Confined Space Entry Plan
- Cast Confined-Space-Coordination-Document R2 2024-12-02
- Job 22-076 SNO Lab - Pico 500 Pressure Vessel - Methodology - Rev 9
- PICO-500 THA - Hydrotest R2 2024-12-09
- SDS - Thermo Fisher Methanol A411 Dec 24 2021 restricted
- SDS - Safety_Data_Sheet_BlueOne_Pickling_Paste_130_EN
- SDS - Welding electrode - BLUESHIELD_2__CERIATED__SDS_8
- SDS - Welding filler rod executive-316-316l-701234
- BW_BlueOne_Pickling_Paste_130_EN_2022_GL_142_Preview
- 2024-11-19 - SAS Weld QA Documents
- PICO-PFH-DET-2006_Rev_F - PICO-500 PV fastener and seal list
- 2024-11-18 - PICO-500 PV NDE and Dimensional Inspection
- 2024-10-08 - PICO-500 PV Material Screening Summary
- SDS - Weldmark-Weld-Cool-WM929
- PICO-PFH-DET-2004 Welding Cleanliness Procedure REV 1

Safety & Compliance Considerations

- SNOLAB Cleanliness Policy
- THA for various activities:
  - PV Welding
  - Pickling and Passivation
  - Pressure Test
- THAs to be planned and approved during Installation Readiness Review
- THAs to be read through on site with contractors before starting work

Job/Task Hazard Assessment Form

General Information

Date of Review		**Type of Assessment**	THA	**Reference Number**	346	**Revision #**	R2
Job/Task Details — **Job Title/Task Description**	SAS - SNOLAB - PICO 500 Pressure Vessel Cleaning and Passivation		**Assessment Team Members** *(list each team member along with their designation and department)*	Rejean Castilloux - PC Chris Jilling - CSO Paul Grylls - PM			
Location/ Equipment *(if applicable)*	SNOLAB						
Task Lead/ Supervisor	Rejean Castilloux	**Task Lead/ Supervisor Signature**		**Authorizing Manager**	Paul Grylls & Chris Jillings	**Authorizing Manager Signature**	
Job/Task Specific Training *List any training that is required for this job/task outside of the typical SNOLAB onboarding training.*	Overhead lifting and rigging, site specific crane/lifting & rigging, relevant mobile equipment operation training (list them: e.g. forklift, skyjack, etc.), **THA TO BE REVIEWED BY CSO as per SDS requirements**						

Hazard Identification and Risk Assessment

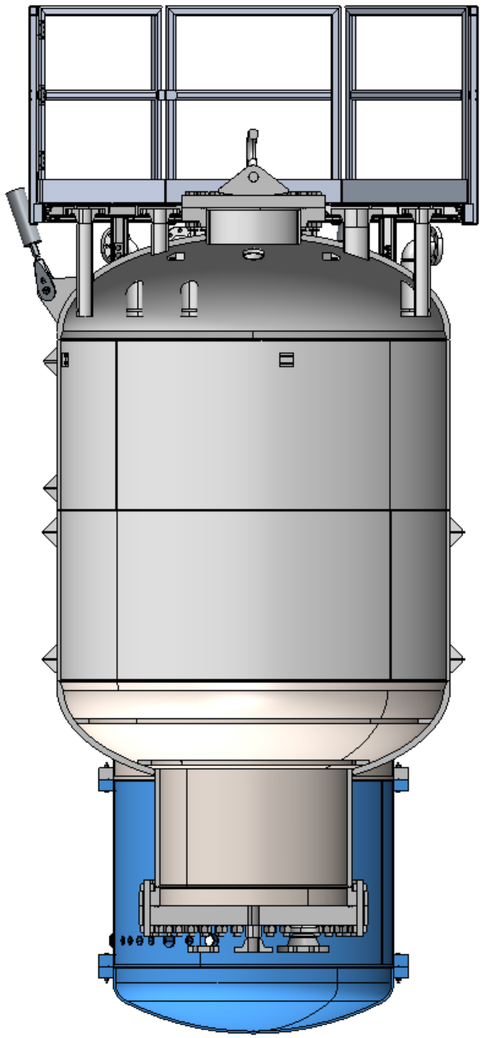
Instructions: (A) Break the job/task down into activities/steps. (B) For each step, identify the hazards. (C) For each hazard identify the specific consequences. (D) For each hazard, identify controls that SNOLAB already has in place. (E) Conduct a baseline risk assessment using SNOLAB's Risk Assessment Matrix. Select the Severity and Probability from the drop down lists in each cell. (F) Identify additional control measures required. For JHAs additional control measures will be the requirement of a THA. (G) Assign a party responsible for implementing the controls. (H) Conduct a final Risk Assessment to determine the residual risk. If the risk is not low, it may require additional controls (this section is not completed for JHAs). *To get a reference number go to the following link (copy and paste into browser) and choose the next available number: https://www.snolab.ca/docushare/dsweb/View/Collection-1148?sort=Title&order=descending*

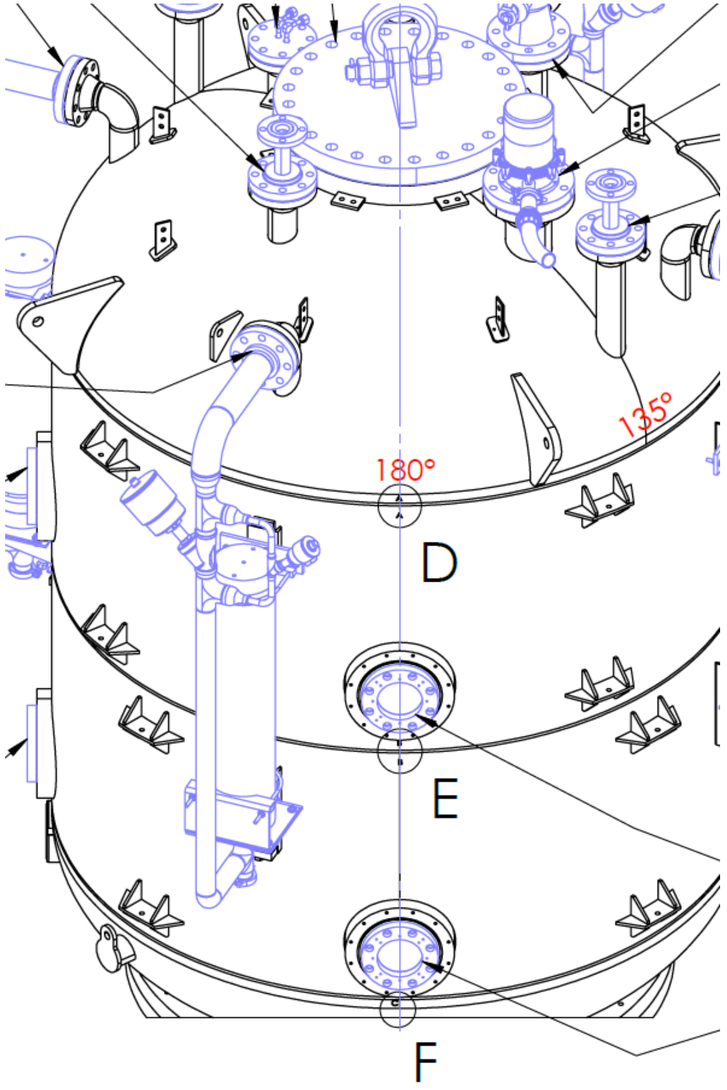
Step #	Description of Activity/Step (A)	Hazards (B)	Consequences *People, Environment, Assets, Reputation* (C)	Existing Controls (D)	Baseline Risk Assessment *With existing controls* (E)			Additional Control Measures/Actions (F)	Responsible Party (Action By) (G)	Residual Risk (H)		
					Severity	Probability	Risk			Severity	Probability	Risk
1	Orientation / Indoctrinations	Workers not orientated Workers unfamiliar with site rules and/or policies / procedures Workers unfamiliar with the work area or job site	Lack of communication Equipment damage or injury	All workers to receive Sno Lab training / orientations prior to commencement of mobilization Supervisor to ensure that all employees are aware of site rules and policies Supervisor to conduct site tour with all personnel before commencement of work	Minor 1	Occasional 2	Low 2		Cast Supervisor & Workers	-- --	-- --	-- --
2	Conduct Daily Toolbox / Daily Line-Up Meeting	Daily toolbox or line-up meeting not held prior to commencement of work Employees not attended or paid attention to the daily toolbox/line-up meeting Scope of work not clearly communicated to workers	Lack of communication Equipment damage or injury	Supervisor to conduct documented daily toolbox meetings in which scope of work and any associated hazards and control measures are discussed to ensure that all employees are aware of the correct procedures to prevent an unwanted incident and any hazards associated with the job task All employees to attend and participate in the daily toolbox/line-up meetings Supervisor to clearly communicate the work scope and daily tasks to all workers and ensure that they understand	Minor 1	Occasional 2	Low 2		Cast Supervisor & Workers	-- --	-- --	-- --
		Task specific hazards not adequately identified and		Perform site walk through, including equipment placement	Minor	Occasional	Low					--

Safety & Compliance Considerations

TSSA

- TSSA Inspector
  - Training
  - Coordination
- Pressure Test
  - Finish Welding/Passivation
  - Install all PV Attachments
  - Leak Check

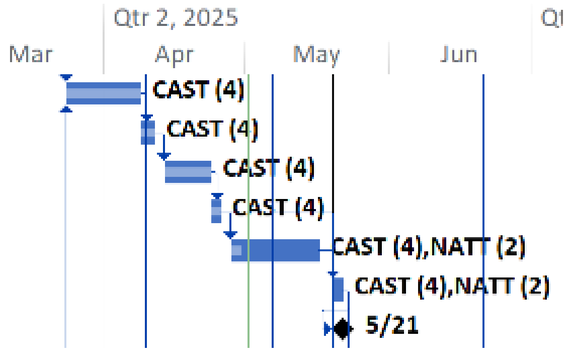




Execution and Real-Time Communication with Multiple Stakeholders

- Getting the lab ready
  - SNOLAB Fiix WO Requests
  - Contactor official start date – 6 weeks in advance
- Executing
  - SNOLAB/PICO, SAS and Cast supervisors on site
  - Weekly meetings
  - Messages via Teams/Slack/email

		% Comple	Task Name	Duration
175		100%	PV Weld #1	2.4 wks
176		100%	Passivate Weld #1	0.6 wks
177		100%	PV Weld #2	1.2 wks
178		100%	Passivate Weld #2	2 days
179		15%	PV Weld #3	3 wks
180		0%	Passivate Weld #3	2 days
181		0%	PV Weld Complete	0 days



Questions ?

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