

Triumph Mine Emergency Communication Plan

Blaine County

IN THE EVENT OF AN UNCONTROLLED RELEASE OF MINE WATER FROM THE TRIUMPH MINE, BEGIN THE NOTIFICATION PROCESS.



**State of Idaho
Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706**

January 2025

Table of Contents

1	Introduction.....	1
2	Location	1
3	Site Access.....	1
4	Emergency Response Organization.....	3
5	Emergency Contact Numbers:.....	4
6	Mine Water Release Assessment.....	4
7	Communication Procedures.....	5
8	DEQ Intra-Agency Contacts.....	6
9	Source Control.....	7
10	Protection of Sensitive Resources	7
11	Irrigation water	7
12	Water Quality Sampling	8
13	Long Term Water Treatment Options	8
14	Emergency Responder Precautions	8
15	Decontamination.....	9
16	Site Safety and Health Plan	9
17	Returning to normal operations	9
18	Plan Distribution.....	9
19	Plan Updates	10
20	Resources.....	10
	Appendix A. Health and Safety Plan for Triumph Mine.....	13

List of Figures

Figure 1. Triumph Mine Location.	2
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1 Introduction

The purpose of the Triumph Mine Emergency Communication Plan is to describe emergency actions in the case of an uncontrolled release of mine water or other emergency causing mine water and waste to impact areas beyond the mine site. The scope of this plan is limited to the precautions and procedures necessary to safely respond to an uncontrolled release of contaminants associated with the mine. This emergency plan should be used in conjunction with existing local, state, and federal emergency response plans. Information about the Triumph Mine Site history and cleanup activities is available at: <https://www.deq.idaho.gov/waste-management-and-remediation/mining-in-idaho/triumph-mine-site/>

2 Location

The Triumph Mine is an inactive mine adjacent to the community of Triumph, Blaine County, Idaho located in the SW1/4 of the SW1/4 of Section 25, Township 4 North, Range 18 East at Latitude 43°38'41.30" North and Longitude 114°15'40.51" West at elevation 6,185 ft above mean sea level (amsl). Approximately 12 miles north-northeast of the town of Hailey or 12 miles south-east of the town of Ketchum, approximately 6 miles from the intersection of Highway 75 and East Fork Rd in Blaine County, Idaho (Figures 1 and 2).

3 Site Access

Triumph Mine and the community of Triumph are accessed from Hailey, Idaho by travelling north on Idaho State Highway 75 approximately 6 miles to East Fork Road; then travelling approximately 6 miles east on East Fork Road to the community of Triumph, Idaho (Figures 1 and 2). The Lower Tailings Pile is located on the south side of the East Fork Road at approximately 6 miles from Highway 75. The Triumph Mine Portal is located above the north side of East Fork Road and is accessed by turning north onto Karst Drive and following the road approximately 550 ft to the locked site access gate (Figure 2). The mine portal is accessible except during the snow season, which is typically from November through late April. The portal entrance is gated and locked.

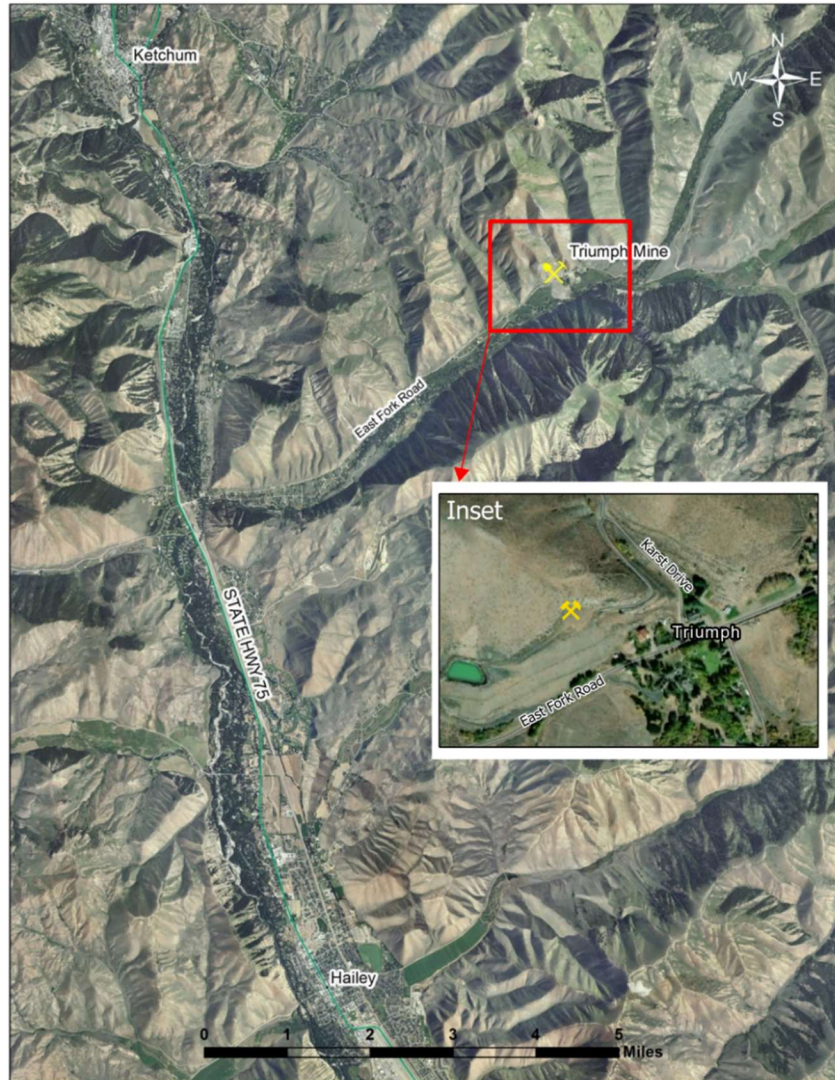


Figure 1. Triumph Mine Location.



Figure 2. Triumph Mine site access and intended flow path for mine water discharge.

4 Emergency Response Organization

Emergency management activities in Idaho are coordinated by the Idaho Office of Emergency Management (IOEM) and associated Idaho Emergency Operation Plan (IBHS 2015). The Idaho Emergency Operations Plan is an all-hazard plan that establishes a single, comprehensive framework for management of response and recovery operations from emerging or potential threats, emergencies, and disasters.

A call to 9-1-1 or the local non-emergency dispatch reporting a release of hazardous materials will activate Idaho's Emergency Response Network consisting of state and local agencies (including designated DEQ regional office personnel) and, if necessary, federal agencies. Following activation of Idaho's Emergency Response Network, the Idaho Emergency Operation

Center will coordinate response activities. DEQ is the coordinating agency for emergencies or disasters when there is a major, actual or potential discharge and/or release of hazardous materials to the environment.

Immediate state assistance can be made by contacting Idaho State Communications (STATECOMM), the on-duty Idaho Response Center (IRC) Operations Section Chief. Local assistance can be made by contacting the Blaine County Sheriff’s Office. The identification of water users and providers impacted can be determined by working with the Idaho Department of Water Resources (IDWR).

5 Emergency Contact Numbers:

Idaho Response Center (IRC) Operations Section Chief	(208) 947-7800
Idaho State Communications (STATECOMM)	(208) 846-7610 or 1-800-632-8000
BLAINE COUNTY SHERIFF OFFICE	(208) 788-5555
Idaho Department of Water Resources (IDWR) SOUTHERN OFFICE	(208) 736-3033
Idaho Department of Environmental Quality (DEQ) TWIN FALLS OFFICE	(208) 736-2190

6 Mine Water Release Assessment

The following information should be obtained by first responders to help facilitate the appropriate level of response required. This information should be reported to the Idaho Emergency Operations Center.

- Site name: *Triumph Mine*
- Location: *Approx. 6 miles east on East Fork Road from the confluence of the Big Wood River.*
- Time of release or discovery:
- Nature of release:
 - Release point:
 - Flow pathway:
 - Estimated flow rate:

- Injuries/fatalities:
- Property damage:
- Actions taken:
- Weather:
- Equipment requirements:

7 Communication Procedures

In the event of an uncontrolled release of mine water from Triumph Mine, communication and notification procedures will follow the procedures established in the Idaho Emergency Operations Plan, a copy of the Office of Emergency's plan can be found on their website, www.ioem.idaho.gov.

Efforts will be made to inform the Triumph community members and citizens immediately impacted, or within the line of impact of the uncontrolled release of contaminated mine material or water. Efforts will include keeping them apprised of water quality results from sampling and guidance on obtaining water quality sampling for private water supplies.

Communications outside the established procedures in the Idaho Emergency Operations Plan should include local water providers diverting water from the East Fork Big Wood River, the Big Wood River from its confluence with the East Fork to Magic Reservoir, and Magic Reservoir. Contact information for local water providers and users should be obtained by contacting the Southern Regional Office of the Idaho Department of Water Resources and identifying the areas of impact.

At a minimum, relevant information provided to stakeholders should include:

- Recorders Name, position, etc.
- An uncontrolled release of mine contaminates (or) contaminated mine water was reported from the Triumph Mine on (Date and time release was reported).
- The mine is located on the East Fork Big Wood River approximately 6 miles upstream from the confluence with the Big Wood River.
- The estimated impact to the Lower Tailings Pile via flooding is (estimated square yards), which may not cause significant downstream flooding or infrastructure damage but may cause exceedances of water quality standards.
- The estimated discharge rate is approximately (estimated discharge) gallons per minute which is not anticipated to cause significant downstream flooding or infrastructure damage but may cause exceedances of water quality standards.
- The primary contaminant of concern for human health and agricultural operations is arsenic.

- Other contaminants associated with the release of mine water that may occur are elevated concentrations of manganese, iron, and zinc.
- The contaminated water, which may appear orange in color due to the high iron concentrations, is estimated to reach Magic Reservoir in:
 - As little as 15 hours during high flow conditions
 - As little as 46 hours during low flow conditions
- It is recommended the diversion of irrigation water from the East Fork and Big Wood Rivers be discontinued until further notice.
- Provide your contact information in the event additional information is needed.

Supporting Agency Local/Contact Information List

Government	Agency	Local Office	Local Contact #
Federal	Bureau of Land Management	Shoshone	(208) 732-7200
	Environmental Protection Agency	Boise	(208) 378-5746
	Army Corp of Engineers	Idaho Falls	(208) 522-1645
	Bureau of Reclamation	Heyburn	(208) 678-0461
State	Idaho Office of Emergency Management (IOEM)	Boise	(208) 258-6500
	State Executive Office of the Governor	Boise	(208)334-2100
	Idaho Department of Environmental Quality (IDEQ)	Twin Falls	(208) 736-2190
	Idaho Department of Water Resources (IDWR)	Twin Falls	(208) 736-3033
	Idaho Department of Lands (IDL)	Jerome	(208) 324-2561
	Idaho Department of Fish and Game (IDFG)	Jerome	(208) 324-4359
County	Blaine County Commissioners Office	Hailey	(208) 788-5500
	Wood River Fire and Rescue	Hailey	(208) 788-5577
	Ketchum Fire Department	Ketchum	(208) 726-7805
	Blaine County Sheriff Department	Hailey	(208) 788-5555
	Blaine County Road and Bridge	Hailey	(208) 788-5580

8 DEQ Intra-Agency Contacts

Department	Contact(s)	Office Location and #
Waste Management and Remediation Division	Remediation Project Coordinator	DEQ State Office, Boise 208-373-0502
DEQ Drinking Water Protection and Finance Division	Source Water Protection Coordinator	DEQ State Office, Boise 208-373-0502
DEQ Surface and Wastewater Division	Water Quality Standards Scientist	DEQ State Office, Boise 208-373-0502
Twin Falls Regional Office	Waste and Remediation Manager Surface Water Quality Manager Source Water Protection Analyst	DEQ Twin Falls Regional Office 208-736-2190

9 Source Control

During an uncontrolled release of contaminants from the Lower Tailings Pile due to flooding, effort should be made where safely accessible to reinforce the edge or otherwise develop a buffer between the flooding waters and the Lower Tailings Pile to limit the amount of eroding, thus exposing and spreading contaminated material.

During an uncontrolled release of mine water from Triumph Mine, the desired flow path is through the established water flow infrastructure located west of the mine portal (Figure 2). If mine water is not discharged through this infrastructure, efforts should be made to redirect the water. Water that flows into the surge pond will be discharged over the pond emergency spillway and down the rock lined riprap channel through a culvert and under East Fork Road and follow drainage on the south side of East Fork Road and on to State of Idaho Land.

10 Protection of Sensitive Resources

Protection of sensitive aquatic habitats may be difficult during an uncontrolled release of mine water. The dissolved nature of the contaminants mixed with river water will render booming and skimming techniques ineffective. Off channel sensitive aquatic habitats may be protected by closing flood control gates or diversions where available, reducing the spread of contaminants into areas where these structures are available.

11 Irrigation water

Stream flows will likely be lower during irrigation season which will result in higher contaminant concentrations. During irrigation season, the response will need to consider the need of closing irrigation diversions. Preliminary modeling indicates water obtained from the Big Wood River will be safe for livestock and irrigated crops during the short term under all release and flow scenarios considered. It should be suggested that irrigation with water from the East Fork Big Wood River should be discontinued until sample results indicate contaminant concentrations are below water quality levels. DEQ program staff in the State Office and Twin Falls Regional Office will coordinate to determine water quality levels.

12 Water Quality Sampling

Surface water sampling should be performed at areas of specific interest to determine contaminant concentrations. Based on regular sample results obtained from the Triumph Mine, the contaminants likely present at detectable concentrations include arsenic, iron, manganese, and zinc. Significant concentrations of lead are unlikely unless erosion of mine contaminated soil occurs.

A short-term release of mine water is unlikely to impact shallow drinking water wells near the East Fork Big Wood River and the Big Wood River. During a long-term release, contaminants associated with the mine water may be detected in shallow wells located near the contaminant flow path. If contaminant concentrations exceed drinking water standards in surface water, sampling of well water used for drinking water should be considered. Initial sampling may include shallow wells located closest to the East Fork Big Wood River and the Big Wood River. Detection of contaminants in the initial wells sampled would prompt a more widespread sampling effort. Results of sampling should be compared to background samples. Historic water quality results for the Triumph Mine Site can be found within EDMS #2013BES6 “WR Triumph Monitoring and O&M Program Mine RA-0002.

13 Long Term Water Treatment Options

In the event of a long term, uncontrolled release of mine water, additional treatment may be necessary, depending on water quality and rate of discharge from the mine. Previous studies suggest that treatment of the mine water at Triumph Mine Site could include increasing the pH with lime or sodium hydroxide and/or aeration of the discharge. The surge pond could provide residence treatment time for low flows. High flows would likely need to occur in settling basins or tanks installed between the mine portal and the surge pond. Depending on conditions, DEQ property west of the surge pond is also available for additional treatment basins.

14 Emergency Responder Precautions

Contaminants of concern (COCs) from an uncontrolled release of mine water from Triumph Mine are antimony, arsenic, cadmium, copper, lead, manganese, mercury, nickel, selenium, silver, vanadium, and zinc. First responders to the mine site for a release of mine water should take appropriate precautions for exposure to arsenic and lead. Depending on the release scenario, precautions should be taken to prevent ingestion, inhalation, and dermal contact.

The Agency for Toxic Substances and Disease Registry (ATSDR) and the Centers for Disease Control and Prevention (CDC) provide a Toxic Substances Portal with information for Emergency Responders (Medical Management Guidelines for Acute Chemical Exposure) for the COCs. Information can be found by searching for each COC on the following website: <https://wwwn.cdc.gov/TSP/index.aspx>

Personal Protective equipment, Level D, is required when handling contaminants at the site. Level D personal protective equipment may include but is not limited to the following: gloves, coverall, safety glasses, steel-toe boots or shoes. Depending on site specific conditions,

additional protection may be required including safety equipment for operations around water such as personal floatation devices (PFDs) and waders.

15 Decontamination

The Triumph Mine site has been remediated and a clean soil cap has been placed over contamination that was left in place. If the clean cap is eroded by discharging mine water and personnel or equipment comes in contact with underlying tailings waste or the discharging mine water, decontamination should be completed. All staff, clothing, and equipment leaving a work area that is contaminated or potentially contaminated, should be inspected for contamination and decontaminated if contamination is identified. Personnel should wash face, hands, and any exposed areas with soap and water when exiting the contaminated area.

A decontamination area for tools and equipment may need to be established near the work area. Trucks, excavation equipment, and tools may become contaminated during normal emergency operations. Any contaminated soil attached to tire treads, undercarriages, or other areas of vehicles or equipment should be removed at the decontamination station prior to leaving the site. Soil collected at the decontamination station should be considered contaminated and will require proper disposal in the contaminated area or in the onsite contaminated soil repository.

16 Site Safety and Health Plan

See Appendix A for the Triumph Mine site specific health and safety plan.

17 Returning to normal operations

Efforts should be made to manage the mine water within the infrastructure established as part of the original cleanup effort determined within the Record of Decision. Once water is flowing within the established infrastructure, efforts will need to be made to assess, clean up and replace any cap or barrier material that was disturbed, so that no exposed or residual contaminated material presents a risk to human health or the environment.

18 Plan Distribution

The master copy of the Triumph Mine Emergency Plan will reside within DEQ's electronic document management system as record number 2017BET52. Copies of the plan will be distributed to the DEQ Emergency Response Coordinator, DEQ Twin Falls Regional Office, DEQ Environmental Liaisons, and other interested parties. As a part of the plan distribution, DEQ Remediation Bureau will reach out to local Blaine County emergency personnel to provide outreach regarding the potential of an emergency at the Triumph Mine site.



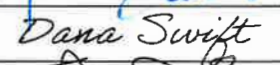


19 Plan Updates

The DEQ Remediation Bureau will retain the master copy of the Triumph Mine Emergency Plan. The Remediation Bureau Chief will allocate resources to facilitate reviews of this plan and coordination to ensure plan information is current. When it is necessary to update the plan, revisions will be distributed as identified. Following any significant plan updates, DEQ Remediation Bureau will reach out to local Blaine County emergency personnel to provide outreach.

DEQ will immediately modify the response plan to address a new or different condition or information that would substantially affect the implementation of a response.

This plan is officially in effect when reviewed, approved and signed by the following people:

Plan approvals

Name/Title	Signature	Date
Michael McCurdy Waste Management and Remediation Division Administrator		01/28/2025
Mark Dietrich DEQ Emergency Response Manager Technical Services Division Administrator		1/28/2025
Dana Swift Remediation Bureau Chief		1-28-2025
Tiffany Bowman Twin Falls Waste and Remediation Regional Manager		1-28-2025
Michael Hahn Triumph Project Manager Preliminary Assessment and Remediation Project Coordinator		1/28/2025

20 Resources

ASARCO Inc. Triumph Mine Tailings Piles Site, Triumph Mine Plug System Construction Completion Report, 2003. EDMS 2018BET28

ASARCO Inc. Triumph Mine Tailings Piles Site, Triumph Mine Plug System Monitoring and Operations and Maintenance Plan, 2003. EDMS 2018BET29

DEQ Record of Decision for Remediation of Contamination at the Triumph Mine Tailings Pile Site, 1998 EDMS 2013BFL84

Idaho Geological Survey (IGS). History of the Triumph, Independence, and North Star Mines, Blaine County, Idaho, 1997. EDMS 2014BET168

Rahe Engineering, Inc. Triumph Mine Adit Plugging Program Assessment Report. Prepared for Idaho Department of Environmental Quality, 2011. EDMS 2013BET114

Tetra Tech, Inc. Final Engineering Evaluation/Cost Analysis for Mine Closure Alternatives, Triumph Mine Adit Plugging Project, Blaine County, Idaho, 2014. EDMS 2014BET84

Tetra Tech, Inc. Final Supplemental Engineering Evaluation/Cost Analysis Triumph Mine Adit Closure Project, Blaine County, Idaho, 2020. EDMS 2024BET148

Tetra Tech, Inc. Construction Completion Report Triumph Mine Adit Rehabilitation and Stabilization Project Blaine County, Idaho, 2021. EDMS 2021BET63

Tetra Tech, Inc. Interim Mine Water Operation and Maintenance Plan, Triumph Mine, Blaine County, Idaho 2024 EDMS 2024BET147

Agency websites:

Agency for Toxic Substances and Disease Registry (ATSDR), more information is available at: <https://wwwn.cdc.gov/TSP/substances/SubstanceAZ.aspx?SST=A1>

Blaine County Government, more information available at: <https://www.co.blaine.id.us/>

EPA. Guidelines for Water Reuse, more information available at: <https://www.epa.gov/waterreuse/guidelines-water-reuse>

Idaho Department of Environmental Quality (DEQ), more information at Triumph webpage. <https://www.deq.idaho.gov/triumph>

DEQ Idaho's *recent Integrated Report*. more information available at: <https://www.deq.idaho.gov/water-quality/surface-water/monitoring-and-assessment/>

Idaho Office of Emergency Management, more information available at: <https://ioem.idaho.gov/>

Idaho Department of Health and Welfare Emergency Medical Services (EMS), more information at: <https://healthandwelfare.idaho.gov/providers/emergency-medical-services-ems/statecomm>

Idaho Department of Fish and Game (IDFG). Complete Fishery Data for Idaho's Waters, more information available at: <https://idfg.idaho.gov/>

Idaho Department of Water Resources (IDWR), more information at: <https://idwr.idaho.gov/>

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Appendix A. Health and Safety Plan for Triumph Mine

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Health & Safety Plan

Triumph Mine, Blaine County, Idaho

**Department of Environmental Quality
State Office/Twin Falls Regional Office**

January 2025

Health & Safety Plan

Triumph Mine, Blaine County, Idaho

Department of Environmental Quality
State Office/Twin Falls Regional Office

January 2025

Approvals

DEQ Health and Safety Manager

Signature:  1-10-25
Name: Scott Pitzer Date

Project Coordinator

Signature:  1/10/2025
Name: Michael Hahn Date

Remediation Bureau Chief


Signature:  1/10/2025
Name: Dana Swift Date

Table of Contents

1. Site Description and Contaminant Characterization.....	1
2. Safety and Hazard Assessments.....	1
Chemical Hazards	1
Physical Hazards	1
Biological Hazards.....	3
Hazard Communication	3
3. Accident Prevention.....	4
4. Health and Safety Training	4
5. Medical Surveillance	4
6. Personal Protection Equipment.....	4
7. Mine Entry	4
8. Safety and Health Work Practices	5
9. Site Control Measures.....	5
10. Personnel and Equipment Decontamination Procedures	6
11. Logs, Reports and Recordkeeping	6
12. Emergency Response Plan and Contingency Procedures	6
13. Spill Containment Plan	8
14. References.....	8

Attachment 1 Job Hazard Analysis

Attachment 2 Directions and Maps to Medical Facilities

Attachment 3 Triumph Tunnel Entry Permit

Attachment 4 Safety Data Sheets

1. Site Description and Contaminant Characterization

This document serves as the Health and Safety Plan (HSP) for the Department of Environmental Quality (DEQ) for activities conducted at the Triumph Mine Site by DEQ field staff. The HSP is site specific and should be used in conjunction with the applicable safety information included in the DEQ General Safety Manual (DEQ, 2022). The site activities include operation and maintenance tasks (O&M), monitoring via the collection of surface water, sediment and groundwater samples. Procedures are spelled out in task specific Quality Assurance Project Plans or O&M plans. Plans will be stored within EDMS folder #2013BES6. No DEQ employees or contractors will enter the mine adit without the necessary qualifications and compliance with OSHA requirements included in 29 CFR 1926.800. Mine entry requires completion of Annual Mine Tunnel Training and compliance with the terms of the mine entry permit included as attachment 3.

2. Safety and Hazard Assessments

Chemical Hazards

The potential contaminants of concern include metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, copper, iron, manganese, zinc, and antimony). Metals previously detected at the sampling sites include arsenic, cadmium, lead, mercury, copper, manganese, silver, and zinc.

Physical Hazards

The main physical hazards are typical of those encountered at a residence and working outdoors; including heat/cold stress, adverse weather conditions, walking and working surfaces. However, another physical hazard involves an upset, irate or threatening person who approaches staff.

Tunnel Ground Stability

Physical hazards associated with entry into the Triumph tunnel include strains and sprains, and slip, trip, fall hazards, cold/heat stress, rain or snow exposure (depending on the season), and electrical storms. Rock fall hazard exists at the site, particularly within the mine. Mine entry will be performed only by a “competent person” as defined in 29 CFR 1926.32 (f).

Atmospheric Hazard

The Triumph tunnel may contain oxygen deficient air, or have other hazardous gases such as carbon monoxide, hydrogen sulfide, and explosive gases. Tunnel entry requires air monitoring within the adit with a multi-gas meter for concentrations of O₂, CO, H₂S and explosive atmosphere (LEL). The multi-gas meter will be calibrated and used in accordance with the requirements included in the owner’s manual. The competent person will monitor the air within the adit with a multi-gas meter at the portal and periodically during advancement to the adit plug at 235 feet. Air Quality

will be recorded in the table included in the Triumph Tunnel Entry Permit (Attachment 3).

Heat Stress

All on-site staff are to be alert to the signs and symptoms of heat stress. Should any of the following symptoms occur (extreme fatigue, cramps, dizziness, headache, nausea, profuse sweating, and pale clammy skin) the employee is to immediately leave the work area, rest, cool off, and drink plenty of cool water. If the symptoms do not subside after a reasonable rest period, the employee will notify the Health and Safety Officer (HSO) and supervisor, and seek medical assistance. The HSO will be alert to signs of heat stress in site personnel and increase the frequency of breaks and fluid consumption as necessary.

Cold Stress

All on-site staff are to be alert to the signs and symptoms of cold stress. Should any of the following symptoms occur (extreme shivering, disorientation, white or gray color of the skin on the ends of fingers, nose, or ears) the staff member is to immediately leave the work area, drink warm fluids or otherwise warm up, and change into dry clothes, as necessary. If the symptoms do not subside after a reasonable rest period, the staff member will notify their supervisor and seek medical assistance. The HSO will be alert to signs of cold stress in site personnel and increase the frequency of breaks and fluid consumption as necessary.

Adverse Weather Conditions

Meteorological conditions will be watched by on-site staff, especially in the spring, summer and fall when severe thunderstorms are likely to occur. Thunderstorms often occur late in the afternoon on hot spring days, but can occur at any time of the day in any season of the year. All work on-site will cease immediately during a thunderstorm or severe thunderstorm warning in the local area or if lightning is visible. In the event of a severe weather warning, all equipment will be secured and workers will assemble in a secure building or other protected area.

General Safety Hazards

Staff will be aware of potential slip, trip, and fall hazards. Staff will use appropriate lifting techniques for heavy objects (e.g., filled coolers).

Threatening Person

Samples are collected from property for which an access agreement has been obtained or on Idaho Department of Lands property. However, should staff be approached by someone who is upset, irate, or otherwise threatening, staff will vacate the area.

Biological Hazards

The potential biological contaminants associated with this project are related to spider bites, insect bites and stings, and animals (e.g., pets or other animals). Staff will avoid contact with biological hazards. Sample team members will inform the HSO of any allergies to stings/bites and will have necessary medication on-site.

Hazard Communication

Personnel will be trained to any chemical's safety data sheet (SDS) used in the work area.

General Requirements

All employees will be provided information about hazardous chemicals and materials to which they are exposed, by means of a hazard communication program, labels and other forms of warning, safety data sheets, and information and training.

Safety Data Sheets (SDS)

A safety data sheet will be in the workplace for each hazardous chemical or material which they use or have on hand. SDS's are included in Attachment 4.

Employee Information and Training

Employees will be provided effective information and training on hazardous chemicals and materials in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical specific information must always be available through labels and safety data sheets.

Employees will be informed of any operations in their work area where hazardous chemicals or materials are present, including the required lists of hazardous chemicals and materials, and safety data sheets.

Employee training will include at least methods and observations that may be used to detect the presence or release of a hazardous chemical or material in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals or materials when being released, etc.); the physical and health hazards of the chemicals or materials in the work area; the measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals or materials, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and the details of the hazard communication program developed by the employer, including an explanation of the labeling system and the safety data sheet, and how employees can obtain and use the appropriate hazard information.

3. Accident Prevention

A Job Hazard Analysis is provided in Attachment 1. Work areas will be visually inspected for potential hazards (mainly slips, trips and falls). Walking and working surfaces will be monitored for slip, trip and fall hazards.

4. Health and Safety Training

Field personnel will have the 40 hour or 24 hour hazardous waste operations and emergency response training, with current 8 hour refresher training.

A sufficient number of field personnel will be trained in first aid treatment of injuries and cardiopulmonary-resuscitation (CPR) and will hold a current, recognized first aid card. Any crew should have at least a minimum of two (2) persons trained in first aid available at all times. First aid training is required for employees working with hazardous machinery or materials or as crews at remote or isolated locations. Persons working where there is an emergency medical response capability are not required first aid training; however, it is recommended.

5. Medical Surveillance

Participation in a medical monitoring program should be considered. A baseline medical evaluation. Episodic evaluation if exposure occurs.

6. Personal Protection Equipment

Level D protection is required. A hard hat, safety glasses and sturdy work boots are required for mine entry. Nitrile gloves will be worn when handling potentially contaminated materials or water. Each DEQ vehicle has a first aid kit to take care of any minor injuries. Nitrile gloves will be worn for sample collection and changed between samples.

7. Mine Entry

Mine entry requires completion of Annual Mine Tunnel Training and compliance with the terms of the mine entry permit included as attachment 3. Careful inspection of tunnel conditions and air quality monitoring is required for tunnel entry. A minimum of two people will be required for mine entry. An attendant must remain outside the mine portal at all times in the event of an emergency in the tunnel. Under no circumstances will the attendant enter the mine. The attendant will contact 911 should an emergency occur. Prior to mine entry cellular service at the site will be confirmed. Two way communications via hand held radio will be maintained at all times between the designated monitor outside the mine and the person entering mine.

Mine entry will be performed only by a “competent person” as defined in 29 CFR 1926.32 (f). A competent person will have completed Annual Mine Tunnel Training and will be capable of identifying existing and predictable hazards within the tunnel which are unsanitary, hazardous or dangerous. The competent person will have authorization to take

prompt corrective measures to eliminate unsanitary, hazardous or dangerous conditions or suspend underground operations until corrective measures are implemented. The competent person is responsible for inspecting and evaluating tunnel conditions, including air monitoring, the presence of air contaminants, ground instability and identifying and correcting any deficiencies.

Upon entry and advancement to the plug location at 235 feet, the competent person will inspect the back and ribs of the tunnel to evaluate changes in tunnel conditions, loose ground and the potential for rock fall or other hazards. The competent person will monitor the air within the adit with a multi-gas meter at the portal and periodically during advancement to the adit plug for concentrations of O₂, CO, H₂S and explosive atmosphere (LEL). Concentrations will be recorded on the attached Triumph Tunnel Entry Permit (attachment 3). The multi-gas meter will be calibrated and used in accordance with the requirements included in the owner's manual.

8. Safety and Health Work Practices

Field activities will be conducted in a safe manner consistent with this HSP.

- Do not eat, drink, smoke, take medications, chew gum or tobacco, or put objects in your mouth while collecting or handling samples.
- When on site or handling samples, thoroughly wash hands and, if necessary, face, before eating or putting anything in your mouth (i.e., avoid hand-to-mouth contamination).
- Be alert to the symptoms of fatigue and heat/cold stress and their effect on the normal caution and judgment of personnel.
- Be alert to potentially changing exposure conditions as evidenced by perceptible odors, unusual appearance of excavated soils, oily sheen on water, or other evidence of possible contamination.
- Use the buddy system at all times while performing sampling activities.
- Use the buddy system for all manual lifting.
- Cease all sampling activities at sunset unless the entire work area is adequately illuminated with artificial lighting.
- During approaching storms or high winds, cease all work and seek shelter as directed by the HSO or local emergency authorities.
- Do not handle contaminated samples or any other potentially contaminated items unless wearing appropriate nitrile gloves.
- Avoid driving over dry grass that is higher than the ground clearance of the vehicle. Lavatory facilities will be accessed through the use of nearby businesses open to public access (e.g., convenience store, gas station or grocery store).

9. Site Control Measures

Prior to the commencement of field activities, work zones will be established, as necessary, to meet operational and safety objectives.

10. Personnel and Equipment Decontamination Procedures

Contamination is not anticipated. All staff, clothing and equipment leaving a work area either contaminated or potentially contaminated, will be inspected and, if necessary, decontaminated to remove any potentially harmful substances.

11. Logs, Reports and Recordkeeping

Employees are advised to notify their supervisor of any potential safety hazard. Employees are responsible for notifying their supervisor immediately if they are involved in an accident or near-miss on state property, in a state vehicle, or during performance of their job duties. If exposed to hazardous substances, employees are advised to notify their supervisor and go directly to a medical provider. It is important that this be done within two hours of exposure.

- A. All work-related accidents or injuries that may or do result in physical harm must be reported to the supervisor before the end of the workday, whether or not medical care is needed.
- B. The same workday, the supervisor will complete a “Supervisors Accident Report” Form, including the corrective action to be taken to prevent similar accidents, and submit to the DEQ Human Resource Office.
- C. If medical care has been sought or is anticipated, more than one day of work is missed, or the employee requests to file a claim, a First Report of Injury and Claim for Benefits Form will be completed by the supervisor, be sent to the State Insurance Fund, and a copy submitted to the DEQ Human Resources Office.

For more information, go to the following link: <https://idahogov.sharepoint.com/sites/DEQ-Home/SitePages/Human-Resources.aspx>

When sample collection is performed as part of the site visit the requirements for Logs, Reports and Recordkeeping will be included as part of the associated Quality Assurance Project Plan and Field Sampling Plan. When Triumph Tunnel entry is required, the air monitoring log included as part of the Triumph Tunnel Entry Permit (Attachment 3) will be completed.

12. Emergency Response Plan and Contingency Procedures

Local emergency response organizations will be contacted to deal with emergency situations more serious than cuts or scrapes. Table 1 provides a list of emergency contact personnel. Directions and maps for medical facilities are in Attachment 2. In the event of an emergency, the HSO will notify the appropriate emergency organization and/or the appropriate local, state, and federal agencies. Medical emergencies will be taken to the nearest medical facility, the location of which will depend on the location of the sampling site (see Table 1 and Attachment 2).

In the event of an emergency in the Triumph Tunnel the designated monitor will contact 911. Under no circumstances will the attendant enter the mine. Coordination with the Ketchum Fire

Department will occur prior to underground operations. Coordination should include the details of the work and general information regarding the location of the site and how access will be obtained in the event of an emergency.

Table 1. Emergency Contact Telephone Numbers.

Emergency Contact*	Telephone
State Office Waste Management & Remediation Division Administrator – Michael McCurdy	208-373-0188 (Office) 208-871-4985 (Cell)
State Office Remediation Bureau Chief – Dana Swift	208-373-0296 (office) 208-871-3944 (cell)
Project Coordinator – Michael Hahn	208-373-0248 (office) 208-949-7752 (cell)
DEQ Safety Desk	208-373-0502
St. Luke’s Family Medicine 1450 Aviation Drive Hailey, ID 83333	208-788-3434
St. Luke’s Wood River Medical Center 100 Hospital Drive Ketchum, ID 83340	208-774-3565
Fire Department Emergency	911
Ketchum Fire Dept. Non-Emergency	208-726-7805
Police Emergency	911
National Response Center	800-424-8802
Idaho Poison Center	800-632-2707
Poison Control	800-764-7661
CDC National Center for Environmental Health and Agency for Toxic Substances and Disease Registry	770-488-7100
CDC Emergency Operations Center	770-488-7100

*Field personnel should verify current information for emergency contacts prior to each field work event.

13. Spill Containment Plan

Spills and releases are unlikely to occur due to the handling procedures to be used. However, since accidents and uncontrolled releases may happen, project personnel will respond to and mitigate any releases according to the SDS (Attachment 4).

14. References

DEQ, April 2022. Idaho Department of Environmental Quality General Safety Manual. EDMS Number 2015AEH1[v2]

Attachment 1 Job Hazard Analysis

Operation/Task	Potential Hazard	Recommended Controls
Motor vehicles	Personal injury and property damage	Valid driver’s license for driver. Seatbelts must be used for each occupant.
Unload and load equipment at each sampling site	Slips, trips and falls	Use care when lifting equipment. Maintain good housekeeping practices. Keep walking services free of mud or slippery surfaces.
Tools and equipment	Personal injury and equipment damage	Follow manufacturer’s recommendations for proper operation. Use the right tool for the job. Know how to properly use tool/equipment. Wear PPE. Inspect equipment prior to being brought on-site and prior to each use. Remove or tag out all defective tools/equipment.
Sampling	Dermal exposure to contaminants in surface, water, sediments or soil	Level D PPE expected with nitrile gloves.
	Threatening Person	Vacate the area.
Heat stress	Heat rash	Change perspiration-soaked clothing when necessary. Bathe at the end of day or work shift. Apply powder to affected areas.
	Heat cramps	Drink plenty of cool fluids even when not thirsty. Provide cool fluids to work crews.
	Heat exhaustion	Avoid caffeinated beverages. Physiological worker monitoring, as needed (i.e., heart rate, oral temperature). Set up work/rest periods. Use the buddy system. Allow workers time to acclimate.
	Heat stroke	Evaluate possibility of night work. Physiological worker monitoring, as needed (i.e., heart rate, oral temperature). Wear body-cooling devices.
Cold stress	Frost nip, frostbite, hypothermia	Wear insulating clothing when temperatures drop below 40°F. Take frequent warm-up breaks. Utilize the buddy system.
Biological hazards (spider and insect)	Bites/stings, allergic reactions, cuts/lacerations	Avoid contact with insects and animals. Inform the HSO of any allergies to stings/bites and have medication on-site. Use insect repellants.

Operation/Task	Potential Hazard	Recommended Controls
bites & stings, dogs or other pets)	from bites, illnesses from insects/animals	
Severe weather	<p>Lightning strikes</p> <p>Thunderstorms, tornadoes</p>	<p>Whenever possible, halt activities and take cover. If outdoors, stay low to the ground. Seek shelter in a building if possible. Stay away from windows. If available, crouch under a group of trees instead of one single tree.</p> <p>Minimize contact with the ground and keep body parts that must touch the ground as close together as possible.</p> <p>Listen to the radio announcements for pending weather information. Cease field activities during thunderstorm or tornado warnings as directed by HSO. Seek shelter. Do not try to outrun a tornado.</p>
Manual lifting injuries	Personal injury	<p>All personnel handling heavy or awkward material will receive instruction on safe lifting procedures.</p> <p>All personnel lifting or lowering material will be instructed to keep their knees bent, back straight, and to use their arms and legs for lifting, not their backs.</p> <p>Additional personnel and/or equipment will be made available to provide assistance with heavy or awkward material.</p>
Working near/sampling from stream and river banks	Slippery surfaces, steep banks, cold water, soft stream bottom, slippery concrete or rocks due to algae, high velocity or depth, drowning	<p>Know your limits. Find a safe area for sample collection. If possible, do not step into stream or river. If a safe alternative is not available, discontinue sample collection.</p> <p>If entry is required, wear PDF and felt or other non-slip soles. Know what hazards are downstream and how you will get out of the river if you fall in and are swept away.</p>
Sample preservatives and calibration solutions	Listed on the SDS for each chemical	Hazard communication prior to use. SDS available with chemical. Practice safe handling procedures and wear appropriate PPE during use.

Operation/Task	Potential Hazard	Recommended Controls
Safety hazards associated with mine sites	Potential contamination, open/collapsed adits, uneven surface terrain, falling or low-hanging objects	Wear appropriate PPE (including hard hats when necessary), minimize exposure, avoid contact with contaminated surfaces, be aware of surroundings, be alert, and stay out/do not enter adit openings.
Groundwater Monitoring	Electrocution	Avoid contact with prongs of plug. Inspect equipment prior to use and repair or replace faulty or defective equipment. Use precautions to prevent liquids from contacting electrical equipment.
Forest fires and wild fires	Personal injury, poor air quality, smoke inhalation	<p>Check fire reports prior to field mobilization.</p> <p>If a forest or wild fire is spotted during field work, evacuate area immediately.</p> <p>If caught in a fire, don't try to outrun the blaze. Instead, look for a body of water such as a pond or river to crouch in. If there is no water nearby, find a depressed, cleared area with little vegetation, lie low to the ground, and cover your body with wet clothing, a blanket, or soil. Stay low and covered until the fire passes. Protect your lungs by breathing air closest to the ground, through a moist cloth, if possible, to avoid inhaling smoke.</p>
Mine Entry	<p>Chemical exposure to metals as a result of inhalation, dermal contact, and/or ingestion.</p> <p>Physical hazards associated with this task include strains and sprains, and slip, trip, fall hazards, cold/heat stress, rain or snow exposure (depending on the season), and electrical storms. Rock fall hazard, particularly within the mine. The air within the mine may be oxygen deficient, or have other hazardous gases such as CO, H₂S, and LEL.</p>	<p>Thoroughly wash hands and face after activities are complete, and especially before eating or drinking. Wear gloves when handling potentially contaminated materials.</p> <p>Precautions include prudent work practices for the proper handling of all equipment, and careful footing when performing any activities on site. Know symptoms associated with heat/cold stress and treat accordingly, bring 1-gal water per person per day. Wear appropriate gear for bad weather and cease work when warranted. For mine entry, complete entry permit and follow entry procedures included in entry permit (attachment 3) including inspecting and evaluation tunnel conditions and performance of air monitoring.</p>

Attachment 2 Directions and Maps to Medical Facilities

St. Luke's Family Medicine
1450 Aviation Drive, Suite 100
Hailey, ID 83333
208-788-3434

Directions:

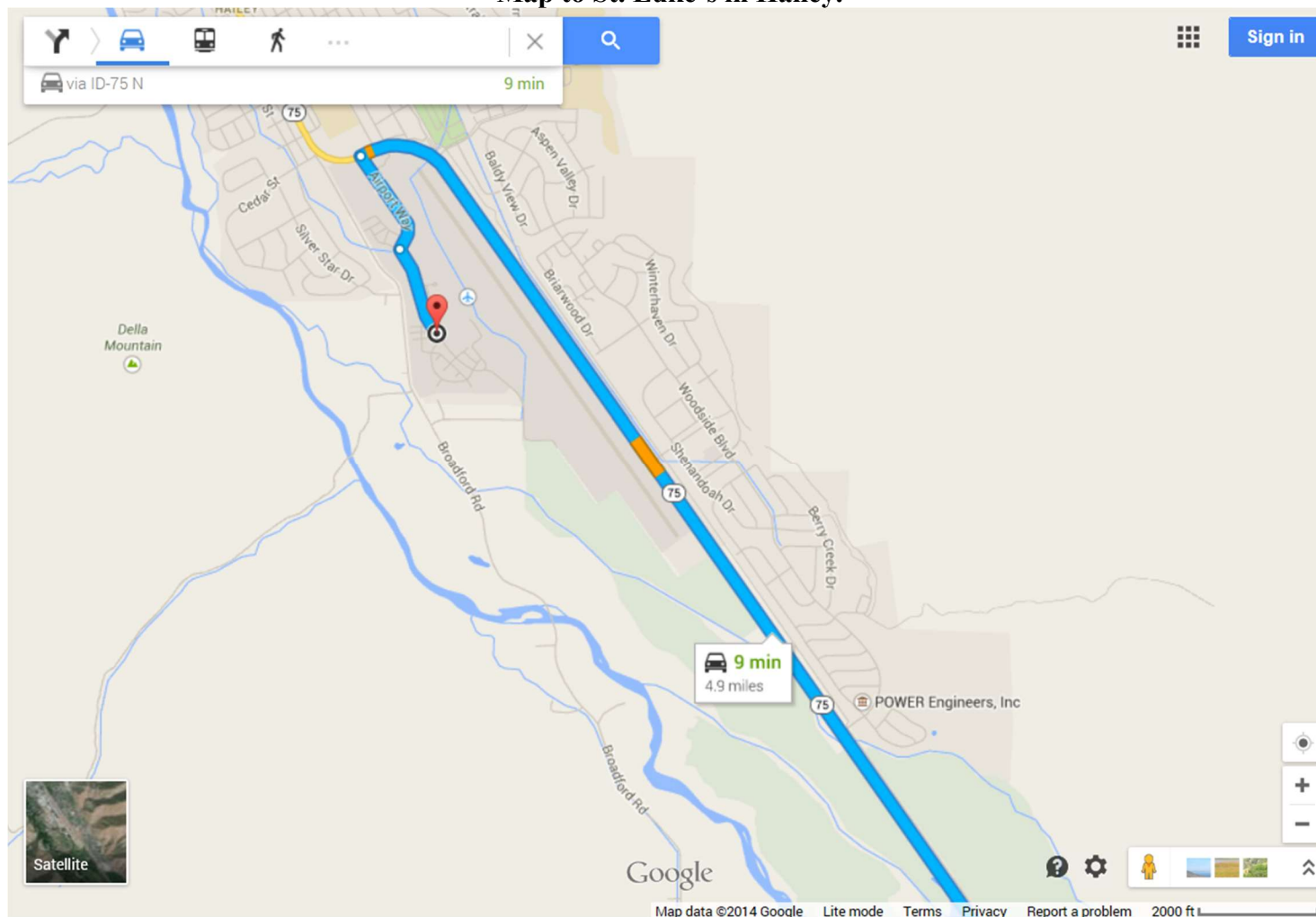
From Triumph, Head west on east fork road. Turn south on ID-75 N/S Main Street toward Oak Street
Turn left on Airport Way
Slight left on Aviation Drive

St. Luke's Wood River Medical Center
100 Hospital Drive
Ketchum, ID 83340
208-774-3565

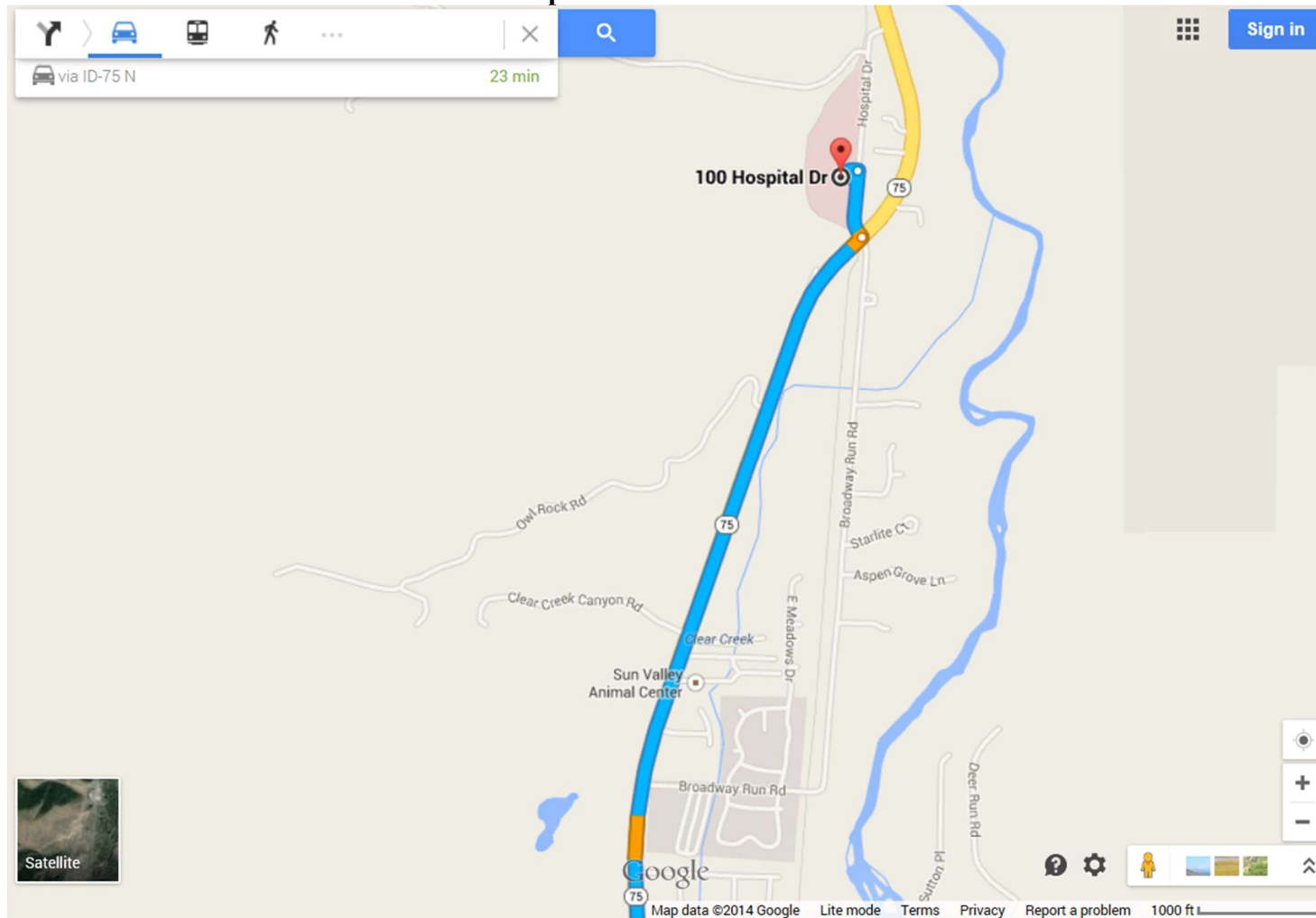
Directions:

From Triumph, Head west on east fork road. Turn north on ID-75 N/S Main Street toward Oak Street
Turn left on Hospital Drive
Turn left and hospital is on the right

Map to St. Luke's in Hailey.



Map to St. Luke's in Ketchum.



Attachment 3 Triumph Tunnel Entry Permit

Triumph Tunnel Entry Permit

Date Issued:	Entry Date:
Permit Duration: 10am-4:30pm	Time of Completion of Entry:
Time of Actual Entry:	Communication: Line of sight / Radio / Cell phone
Entrants:	Attendants:
Purpose of Entry: 235 foot Plug/Tunnel inspection	

Emergency Contact Information

Contact	Phone
Rescue Contact: Ketchum Fire Dept.	911
Ketchum Fire Dept. Non-Emergency	208-726-7805
Waste Division Administrator: Michael McCurdy	208-373-0188 (office) 208-871-4985 (cell)
Remediation Bureau Chief: Dana Swift	208-373-0296 (office) 208-871-3944 (cell)
Project Coordinator- Michael Hahn	208-373-0248 (office) 208-949-7752 (cell)
DEQ Safety Desk	208-373-0502

Directions for site Access (see attached access map): The Triumph Mine is located in Triumph, Blaine County, Idaho at Latitude 43°38'41.30" North and Longitude 114°15'40.51" West. The mine is accessed from Hailey, Idaho by travelling north-northwest on Idaho State Highway 75 approximately 6 miles to East Fork Road; then travelling approximately 6 miles east on East Fork Road to the community of Triumph, Idaho. The Triumph Mine is located above the north side of East Fork Road and is accessed by turning north off of East Fork Road onto Karst Drive and following the road approximately 2000 ft to the mine entrance. The access road is not plowed during the winter and special accommodations may be required when the road is snow covered.

Atmospheric Testing

Air Monitor Brand/Model #	
Calibration date	

**Testing will be performed before entry and will be continuous.

Parameter	PEL	1	2	3	4	5	6	7
O2 min	19.5 –20.9%							
LEL	<10%							
CO	<35ppm							
H2S	<10ppm							
Location (ft from portal)	Location							
Time	Time							

Remediation Bureau Chief Approval _____ Date _____

I hereby certify that I have received access to the Triumph Mine, Health and Safety Plan including the Triumph Mine Entry Procedures and I have read and understand the procedures and guidelines intended to assist in hazard avoidance, hazard recognition and general safety requirements for activities conducted at the Triumph Mine Site.

Entrant Signature _____ Date _____

Attendant Signature _____ Date _____

Triumph Tunnel Entry Permit

Entry Procedures: A minimum of two people will be required for mine entry. One person must remain outside the mine portal at all times as a monitor in the case of an emergency. Under no circumstances will the monitor enter the mine. The monitor will contact 911 should an emergency occur. Prior to mine entry cellular service at the site will be confirmed. Two way communications via hand held radio will be maintained at all times between the designated monitor outside the mine and the person entering mine.

Mine entry will be performed only by a “competent person” as defined in 29 CFR 1926.32 (f). The competent person will be capable of identifying existing and predictable hazards within the tunnel which are unsanitary, hazardous or dangerous. The competent person will have authorization to take prompt corrective measures to eliminate unsanitary, hazardous or dangerous conditions or suspend underground operations until corrective measures are implemented. The competent person is responsible for inspecting and evaluating tunnel conditions, including air monitoring, the presence of air contaminants, ground instability and identifying and correcting any deficiencies.

Upon entry and advancement to the plug location at 235 feet, the competent person will inspect the back and ribs of the tunnel to evaluate changes in tunnel conditions, loose ground and the potential for rock fall or other hazards. The competent person will monitor the air within the adit with a multi-gas meter at the portal and periodically during advancement to the adit plug for concentrations of O₂, CO, H₂S and explosive atmosphere (LEL). Concentrations will be recorded on the attached air monitoring log. The multi-gas meter will be calibrated and used in accordance with the requirements included in the owners manual.

PPE: Level D PPE is required for this task including sturdy work boots, hard hat, safety glasses, and gloves (when handling potentially contaminated materials or water).

Emergency Procedures: In the event of an emergency the designated monitor will contact 911. Coordination with the Ketchum Fire Department will occur prior to underground operations. Coordination should include the details of the work and general information regarding the location of the site and how access will be obtained in the event of an emergency.

Triumph Tunnel Entry Permit



Attachment 4 Safety Data Sheets

00004 EU

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name : 100-4, 560-4 (pH4.01 phthalate standard solution)

Product code : 3200043638, 9003001600, 3200741081

SDS Drawing Code : M002383

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses

Reference solution for pH electrode

Uses advised against

Not available.

1.3 Details of the supplier of the safety data sheet

e-mail address of person responsible for this SDS : techinfo.hor@jp.horiba.com

1.4 Emergency telephone number

National advisory body/Poison Center

Telephone number United Kingdom (UK) : +44 (0)20 7771 5310

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Ingredients of unknown toxicity : Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1%
Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1%
Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1%

Ingredients of unknown ecotoxicity : Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1%

Classification according to Directive 1999/45/EC [DPD]

The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Not classified.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word : No signal word.

SECTION 2: Hazards identification

- Hazard statements** : No known significant effects or critical hazards.
- Precautionary statements**
- General** : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
- Prevention** : Wear protective gloves and eye or face protection.
- Response** : Get medical advice/attention.
- Storage** : Keep cool and protect from sunlight. Store locked up.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Not applicable.
- Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.
- Special packaging requirements**
- Containers to be fitted with child-resistant fastenings** : Not applicable.
- Tactile warning of danger** : Not applicable.

2.3 Other hazards

- Other hazards which do not result in classification** : None known.

SECTION 3: Composition/information on ingredients**3.2 Mixtures** : Mixture

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
potassium hydrogen phthalate	EC: 212-889-4 CAS: 877-24-7	1	Not classified.	Not classified.	[6]

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

SECTION 4: First aid measures**4.1 Description of first aid measures**

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

SECTION 4: First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed**Potential acute health effects**

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
Carbon dioxide
carbon monoxide
metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- 6.2 Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

- Recommendations** : Not available.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available.

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

SECTION 8: Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties****Appearance**

Physical state : Liquid.
Color : Colorless.
Odor : Not available.
Odor threshold : Not available.
pH : 4.01
Melting point/freezing point : 0°C
Initial boiling point and boiling range : 100°C
Flash point : [Product does not sustain combustion.]
Evaporation rate : Not available.
Flammability (solid, gas) : Not available.
Upper/lower flammability or explosive limits : Not available.
Vapor pressure : Not available.
Vapor density : Not available.
Relative density : Not available.
Solubility(ies) : Not available.
Partition coefficient: n-octanol/ water : Not available.
Auto-ignition temperature : Not available.
Decomposition temperature : Not available.
Viscosity : Not available.
Explosive properties : Not available.
Oxidizing properties : Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : No specific data.

SECTION 10: Stability and reactivity

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Conclusion/Summary : Not available.

Acute toxicity estimates

Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitization

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

SECTION 11: Toxicological information**Long term exposure**

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: Ecological information**12.1 Toxicity**

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods**Product**

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

SECTION 13: Disposal considerations

- Hazardous waste** : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.
- Packaging**
- Methods of disposal** : The generation of waste should be avoided or minimized wherever possible. Incineration or landfill should only be considered when recycling is not feasible.
- Special precautions** : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

- 14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

SECTION 15: Regulatory information

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	

Full text of abbreviated H statements : Not applicable.

Full text of classifications [CLP/GHS] : Not applicable.

Full text of abbreviated R phrases : Not applicable.

Full text of classifications [DSD/DPD] : Not applicable.

Date of issue/ Date of revision : 2017/12/06

Date of previous issue : 2017/12/06

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Nitric Acid CAS No 7697-37-2	MATERIAL SAFETY DATA SHEET SDS/MSDS
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : **Nitric Acid**

CAS-NO. : 7697-37-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet

Company : Central Drug House (P) Ltd
7/28 Vardaan House
New Delhi-10002
INDIA

Telephone : +91 11 49404040
Email : care@cdfinechemical.com

1.4 Emergency telephone number

Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Oxidizing liquids (Category 3), H272
Skin corrosion (Category 1A), H314

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

O Oxidising R 8
C Corrosive R35

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word : **Danger**
Hazard statement(s)
H272 : May intensify fire; oxidiser.
H314 : Causes severe skin burns and eye damage.

Precautionary statement(s)	
P220	Keep/Store away from clothing/ combustible materials.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P310	
Supplemental Hazard Statements	none

2.3 Other hazards - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Molecular Weight	:	63,01 g/mol
EC-No.	:	231-714-2
Index-No.	:	007-004-00-1

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
Nitric acid	Ox. Liq. 3; Skin Corr. 1A; H272, H314	-

Hazardous ingredients according to Directive 1999/45/EC

Component	Classification	Concentration
Nitric acid	O, C, R 8 - R35	-

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

- 5.2 Special hazards arising from the substance or mixture**
nitrogen oxides (NOx)
- 5.3 Advice for firefighters**
Wear self contained breathing apparatus for fire fighting if necessary.
- 5.4 Further information**
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.
- 6.2 Environmental precautions**
Do not let product enter drains.
- 6.3 Methods and materials for containment and cleaning up**
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).
- 6.4 Reference to other sections**
For disposal see section 13.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling**
Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition.
For precautions see section 2.2.
- 7.2 Conditions for safe storage, including any incompatibilities**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- 7.3 Specific end use(s)**
A part from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

- 8.1 Control parameters**
Components with workplace control parameters
- 8.2 Exposure controls**
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
- Personal protective equipment**
- Eye/face protection**
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
- Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---|--|
| a) Appearance | Form: liquid
Colour: colourless |
| b) Odour | no data available |
| c) Odour Threshold | no data available |
| d) pH | < 1 at 20 °C |
| e) Melting point/freezing point | no data available |
| f) Initial boiling point and boiling range | 100 °C at 1.013 hPa |
| g) Flash point | no data available |
| h) Evaporation rate | no data available |
| i) Flammability (solid, gas) | no data available |
| j) Upper/lower flammability or explosive limits | no data available |
| k) Vapour pressure | 11 hPa at 20 °C |
| l) Vapour density | no data available |
| m) Relative density | 1,4 g/cm ³ |
| n) Water solubility | completely soluble |
| o) Partition coefficient: n-octanol/water | no data available |
| p) Auto-ignition temperature | no data available |
| q) Decomposition temperature | no data available |
| r) Viscosity | no data available |
| s) Explosive properties | no data available |
| t) Oxidizing properties | The substance or mixture is classified as oxidizing with the category 3. |

9.2 Other safety information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

May discolor on exposure to air and light.

10.5 Incompatible materials

Alkali metals, Organic materials, Acetic anhydride, Acetonitrile, Alcohols, Acrylonitrile

10.6 Hazardous decomposition products

Other decomposition products - no data available

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

no data available

Skin corrosion/irritation

Skin - rabbit

Result: Extremely corrosive and destructive to tissue.

(Draize Test)

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

Reproductive toxicity - rat - Oral

Effects on Newborn: Biochemical and metabolic.

Developmental Toxicity - rat - Oral

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Additional Information

RTECS: Not available

Large doses may cause: conversion of hemoglobin to methemoglobin, producing cyanosis; marked fall in blood pressure, leading to collapse, coma, and possibly death., Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

Liver - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish LC50 - Asterias rubens - 100 - 330 mg/l - 48 h

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

May be harmful to aquatic organisms due to the shift of the pH.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 2031

IMDG: 2031

IATA: 2031

14.2 UN proper shipping name

ADR/RID: NITRIC ACID

IMDG: NITRIC ACID

IATA: Nitric acid

Passenger Aircraft: Not permitted for transport

14.3 Transport hazard class(es)

ADR/RID: 8 (5.1)

IMDG: 8 (5.1)

IATA: 8 (5.1)

14.4 Packaging group

ADR/RID: I

IMDG: I

IATA: I

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user

no data available

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H272	May intensify fire; oxidiser.
H314	Causes severe skin burns and eye damage.
Ox. Liq.	Oxidizing liquids
Skin Corr.	Skin corrosion

Full text of R-phrases referred to under sections 2 and 3

C	Corrosive
O	Oxidising
R 8	Contact with combustible material may cause fire.
R35	Causes severe burns.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.