Mountain View Exploration Project

Plan of Operations and Nevada Reclamation Permit Application

Millennial NV, LLC

An Integra Resources Company

January 2023

Revised December 2025

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Plan of Operations NVNV106271234/ Nevada Reclamation Permit Application No. 0453

Submitted to:

US Department of the Interior
Bureau of Land Management
Winnemucca District Office – Black Rock Field Office
5100 E Winnemucca Blvd
Winnemucca, Nevada 89445

and

State of Nevada
Department of Conservation and Natural Resources
Division of Environmental Protection
Bureau of Mining Regulation and Reclamation
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Submitted by:

INTEGRA RESOURCES

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January 2023
Revised December 2025

Executive Summary

This Exploration Plan of Operations NVNV106271234 and Nevada Reclamation Permit Application No.0453 (Plan) is being submitted to the U.S. Department of the Interior – Bureau of Land Management, Black Rock Field Office (BLM), and the Nevada Division of Environmental Protection (NDEP) – Bureau of Mining Regulation and Reclamation (BMRR) by Millennial NV, LLC (Millennial) for the Mountain View Project (Project), a precious metal exploration operation located in Washoe County, Nevada. This Plan is submitted in accordance with the BLM Surface Management Regulations Title 43 Code of Federal Regulations 3809, as amended, and Nevada Reclamation Regulations within the Nevada Administrative Code (NAC) 519A.

Proposed work will occur on 3,328 acres of public land administered by the BLM and controlled by Millennial, all of which is located in Washoe County, Nevada near the Granite Range. **Figure 1** depicts the location of the Project Area from a regional extent. **Figure 2** shows the Project Area location, access routes, land ownership, and claim block.

Millennial is currently authorized to conduct exploration activities on up to 4.16 acres of public land administered by the BLM under a Notice within the proposed 3,328-acre Project Area. The total acknowledged and constructed surface disturbance is detailed in **Table 1** below and depicted on **Figure 3.**

Table 1: Acknowledged/Constructed Surface Disturbance on Public Land

Activity	Mountain View NVNV105852743 (acres)		Total (acres)
	Constructed	Acknowledged Not Constructed	
Overland Travel	-	-	**-**
Exploration Drill Pads & Sumps	2.6	0.24	**2.84**
Constructed Roads & Turnouts	1.20		**1.20**
Geotechnical Test Pits & Trenches	-	-	**-**
Laydown Yards	-	0.12	**0.12**
TOTAL	**3.8**	**0.36**	**4.16**

Millennial is submitting this Plan to expand exploration activities within the Project Area and conduct baseline data collection to support future mine permitting. Additional exploration drilling is required to fully define the identified resource to a level appropriate to design and

operate a mining operation. Collection of baseline data will be conducted in anticipation of permitting the mine while the resource is adequately developed.

Millennial proposes to conduct up to 400 acres of surface-disturbing activities for mineral exploration and baseline data collection. Proposed activities under this Plan include:

- Construction of drill pads and drill roads (including overland travel);
- Access road maintenance including grading, drainage ditches, waterbars, etc.;
- Access road improvements including culvert installations as needed and road widening as shown on **Figure 4**;
- Drilling (core, sonic, auger, reverse circulation);
- Monitoring well and piezometer installation;
- Water Production well installation;
- Geochemical and geotechnical data collection including trenching, test-pitting, and borehole drilling; and,
- Laydown yards.

The exact locations of all 400 acres of surface disturbance have not been determined as the locations will be chosen on multiple factors including geology or mineralization found during exploration drilling and requirements for future mine component design. This flexibility is necessary to the Project as the geological understanding and mineral targets evolve over time based on the exploration results. Therefore, Millennial will conduct and bond activities in a phased manner, starting with Phase I. Phase I activities will consist of 75.46 acres of surface disturbance as depicted on **Figure 4** and detailed in **Table 2**. This includes 4.16 acres of acknowledged disturbance and 71.30 acres of proposed disturbance. Upon Plan approval, the existing Notice will be terminated, and the Notice-acknowledged disturbance will be incorporated into the Plan and bonded sufficiently.

A reclamation cost estimate (RCE) to reclaim acknowledged surface disturbance (**Table 1**) and proposed Phase I surface disturbance (**Table 2**) which totals 75.46 acres is included in **Appendix A**.

Table 2: Acknowledged/Constructed and Proposed Surface Disturbance

Activity	Disturbance Type (acres)				
	Acknowledged/ Constructed[1]	Proposed Phase I	Total Phase I	Proposed in Future Phases	Total
	Public	Public	Public	Public	Public
Overland Travel Routes	-	-	**0**	9.57	**9.57**
Exploration Drill Pads & Sumps	2.84	25.69	**28.53**	71.47	**100**
Constructed Roads & Turnouts	1.20	43.48	**44.68**	228.98	**273.66**
Geotechnical Test Pits & Trenches	-	-	**0**	4.78	**4.78**
Wells (Monitoring & Production)	-	2.13	**2.13**	7.19	**9.32**
Yards (Laydown)	0.12	-	**0.12**	2.55	**2.67**
TOTAL	**4.16**	**71.30**	**75.46**	**324.54**	**400**

[1]3.8 acres out of the 4.16 acknowledged acres have been constructed under the Notice (**Table 1**).

The acreages in **Table 2**, above, are approximate (conservative) values and may vary depending on exploration results. Future phases will be presented to the BLM and NDEP for concurrence as a work plan prior to commencing activities. Work plans will include a brief description of planned activities, a figure depicting those activities, the associated geographic information system (GIS) shapefiles, and an updated RCE.

Millennial will provide the BLM and BMRR an annual report and map on or before April 15 of each year that documents surface disturbance locations including GIS shapefiles, if requested, with types of surface disturbance and any completed concurrent reclamation that occurred in the previous calendar year. The annual report and map will describe the following:

- Locations of work performed during the year;
- Locations and dates regrading was completed;
- Locations and dates reseeding was completed; and,
- Locations and dates partial and full bond releases were approved by the lead agency.

The Project will be analyzed under the National Environmental Policy Act (NEPA). In anticipation of this analysis, Millennial, in coordination with BLM, has conducted baseline studies within the Project Area including biological and cultural resources surveys, environmental justice and socioeconomic baseline analyses, an air inventory, and an aquatic resource delineation report.

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List of Abbreviations

AMSL	Above Mean Sea Level
BBCS	Bird and Bat Conservation Strategy
BGS	Below Ground Surface
BLM	Bureau of Land Management
BMRR	Bureau of Mining Regulation and Reclamation
BMP	Best Management Practices
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
GIS	Geographic Information System
HPTP	Historic Properties Treatment Plan
Millennial	Millennial NV, LLC
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NRS	Nevada Revised Statues
OSHA	Occupational Safety and Health Administration
Oz/t	Ounce per Ton
Plan	Exploration Plan of Operations
PLS	Pure Live Seed
Project	Mountain View Project
Project Area	Location where Project activities are proposed
RC	Reverse Circulation
RCE	Reclamation Cost Estimate
UTV	Utility Terrain Vehicle
VWP	Vibrating Wire Piezometer
4WD	Four-Wheel Drive

1. Operator/Claimant Information

1.1. Operator Information

Pursuant to 43 CFR§ 3809.401, Millennial NV, LLC will notify the BLM in writing within 30 calendar days of any change of operator or corporate point of contact or in the mailing address of the operator or corporate point of contact.

Operator Name:	Millennial NV, LLC
Mailing Address:	PO Box 52
	Jordan Valley, OR 97910-0052
Telephone Number:	208-870-7993

1.2. Corporate Information

Parent Corporation Name:	Integra Resources Corp.
Corporate Headquarters:	Vancouver, BC
Mailing Address:	400 Burrard Street, Suite 1050
	Vancouver, BC, Canada, V6C 3A6

1.3. President and Director

Full Name:	George Salamis
Street Address:	400 Burrard Street, Suite 1050
	Vancouver, BC V6C 3A6
Telephone Number:	604-614-0168
Email Address:	george.salamis@integraresources.com

1.4. Site Contact

Full Name:	Dale Kerner
Mailing Address:	PO Box 52
	Jordan Valley, OR 97910-0052
Telephone Number:	208-870-7993
Email Address:	dale@integraresources.com

1.5. Nevada Registered Resident Agent Information

Full Name:	Gregg P. Barnard
Mailing Address:	6100 Neil Road, Suite 500
	Reno, Nevada 89511
Telephone Number:	775-688-3000

1.6. Taxpayer Information

The taxpayer ID for Millennial NV, LLC has been provided under separate cover.

1.7. Claim/Claimant Information

Claim Types: The Mountain View Project is located on unpatented lode claims on public lands administered by the BLM.

Claim Owner: All unpatented claims are owned or controlled by Millennial NV, LLC.

The Project is located in Washoe County, Nevada as shown in **Figure 1.** The Project is situated on public land administered by the BLM, Winnemucca District, Black Rock Field Office as shown on **Figure 2**. Within the proposed work area, Millennial owns or controls 189 federal unpatented lode mining claims that have been properly located, filed, recorded, and maintained in accordance with United States Code (U.S.C.) Title 30 Part 28, U.S.C. Part 1744, Code of Federal Regulations (CFR) Title 43 Subparts 3830 through 3839, and Nevada Revised Statutes (NRS) Title 46, Chapter 517, all as applicable. Claim ownership and a list of the mining claims affected by this Plan are shown in **Appendix B** including serial numbers and corresponding claim names.

2. Description of Operations

This section provides a detailed description of the existing operations and the proposed actions.

2.1. Location and Legal Description

The proposed Project Area encompasses all or parts of Sections 5, 6, 7, 8, 9, 16, 17, 18, 19, 20, and 21 Township 34 North (T34N), Range 22 East (R22E); Mount Diablo Baseline and Meridian (**Figures 1 and 2**).

2.2. Project Access

Primary access to the Project is from Gerlach, Nevada. Take NV-447 north from Gerlach for approximately 16 miles. Turn right (east) onto the access road and continue for approximately two miles on dirt roads to reach the Project Area. Project access is depicted on **Figure 2.**

2.3. Land Status

The proposed Project Area encompasses 3,328 acres, all of which are public land administered by the BLM (**Figure 2**). There are no private, state or United States Forest Service land within the Project Area.

2.4. Disturbance from Past and Present Operators

The Project Area is located within the Deephole Mining District and includes the old Mountain View Mine which was originally explored in 1938. Some gold ore was produced from the main adit from 1939 to 1941, though later attempts to rework the mine in the early 1960s were unsuccessful. There was little exploration or mining activity from 1940 until 1984, when the Project Area became the focus of significant exploration by multiple companies. The exploration programs operated under Notice-level acknowledgements, with activities that included construction of drill pads, sumps, and roads.

Evidence of this historical mining activity is present throughout the Project Area. Millennial delineated pre-1981 and pre-operator surface disturbance in the Project Area **(Figure 5).**

Millennial's involvement at the Project began in mid-2021. After acquiring the Project in 2021, Millennial submitted a Notice to conduct exploration activities at the Project. Exploration activities acknowledged by the BLM to date include constructed drill pads and sumps, access roads, and two laydown yards totaling 4.16 acres (**Table 1**). Millennial has assumed reclamation responsibility for past and present surface-disturbing activities within the Project Area shown in **Figure 3**, excluding areas disturbed by previous operators that were inactive on or before January 1, 1981, as shown in **Figure 5.**

2.4.1. Areas Disturbed by Previous Operator and Inactive

Previous surface disturbing activities occurred throughout the Project Area prior to 1981. Many of the roads withing the Project Area appear on the Squaw Valley and Banjo 7.5-minute United States Geological Survey (USGS) quadrangles, which were published in 1982. The pre-1981 surface disturbance was delineated based on aerial imagery and is shown on **Figure 5**. Approximately 1.08 acres of surface disturbance and 20 square miles of access roads exist within the Project Area as a result of activities by previous operators that occurred prior to January 1, 1981. Millennial does not assume responsibility for reclamation of pre-1981 surface disturbance in the Project Area.

Approximately 3.8 acres were disturbed by Millennial in 2021 and 2022, when exploration pads, sumps, access roads, and a laydown area were constructed under Notice NVN 100451.

2.4.2. Areas Disturbed by Current Operator prior to January 1, 1981, and Inactive

None.

2.4.3. Areas Disturbed by Current Operator prior to January 1, 1981, and Still Active

None.

2.4.4. Areas Disturbed by Current Operator after January 1, 1981, but prior to October 1, 1990, and Inactive

None.

2.4.5. Areas Disturbed by Current Operator after January 1, 1981, but prior to October 1, 1990, and Active

None.

2.4.6. Areas Active on or after October 1, 1990

Areas within the Project Area that have been active on or after October 1, 1990 are presented in **Table 1** above and consist of precious metal exploration activities conducted on public land.

Other areas within the Project Area that have been active on or after October 1, 1990 are depicted on **Figure 3** and **Figure 4** and consist of roads not related to precious metal exploration activities. However, some of these roads are proposed to be utilized in this Plan and are accounted for in disturbance calculations in **Table 2** and depicted on **Figure 4**.

2.4.7. Location of Access Roads Existing prior to January 1, 1981

Access roads existing prior to 1981 are discussed in Section 2.4.1 above and are shown on **Figures 2** and **5**. These roads include:

- State Route 447
- Granite Mountain Drive

- Power line road
- Multiple unnamed secondary access roads throughout the Project Area.

2.4.8. Location of Surface Water Bodies within One-half Mile Downgradient of Disturbance

No perennial rivers, or streams are located within the Project Area. A small portion of the Granite Mountain Reservoir (previously Squaw Valley Reservoir) lies within the southwest corner of the Project boundary. The next closest perennial lake is Pyramid Lake, which is located approximately 45 miles south of the Project Area.

Millennial performed an aquatic resource delineation report for the Project Area as part of Project preparation and identified 11 ephemeral streams, two woody riparian wetlands, and one impounded lake. All the features were determined to be isolated waters and have no connection to downstream jurisdictional tributaries or waterbodies (Cedar Creek 2024). The National Hydrography Dataset (NHD) indicated three seeps and springs in the survey area including one named spring: New Spring (**Figure 3**). The seeps and springs were visited in the field during the survey. An approved jurisdictional determination from the U.S Army Corp. of Engineers is pending.

2.5. History

The Mountain View Project is in the Deephole mining district and includes the old Mountain View mine, located approximately 8,000 feet north of the Severance deposit. The mine was originally explored underground in 1938 by the Anaconda Company however, no commercial mineralization was defined.

From 1939 to 1941, the Burm-Ball Company produced some gold old from a winze sunk from the main (lower) adit level. This production was followed by intermittent unsuccessful attempts to rework the mine, most recently in 1961 and 1962.

There was little exploration or mining activity from 1940 until 1984 when the Mountain View area became the focus of a significant amount of exploration effort. The property was staked or re-staked in 1979.

In 1984, rejuvenated exploration began with St. Joe Minerals (St. Joe) in the vicinity of the Mountain View mine. St. Joe undertook geophysics and seven RC drill holes in the vicinity of the Project Area. This exploration was followed by programs from US Borax in 1986, N.A. Degerstrom Inc. from 1988 to 1990, Westgold in 1989, Canyon Resources Corp. (Canyon) from 1992 to 1994, Homestake Mining Company (Homestake) from 1995 to 1996 and finally, Franco-Nevada Mining Corp. (Franco-Nevada) from 2000 to 2001.

Canyon formed a joint venture with Independence Mining (Independence) in 1992. From 1992 to 1994, Canyon and Independence carried out extensive exploration programs including mapping, sampling, geophysical surveys, and drilling. This work resulted in the discovery of the Severance deposit by a drill hole that intersected 400 feet of 0.017 ounce per ton (oz/t) gold.

Canyon went on to acquire 100% ownership in 1995. Canyon then entered into a joint venture agreement with Homestake as the operator.

Newmont acquired the property in February 2002 during the takeover of Franco-Nevada and subsequently sold it to Vista Gold Corp. (Vista) in October 2002. Vista completed two programs of RC drilling during October and November in 2003 and 2004. Since these programs, no other exploration of consequence has been conducted on the Mountain View Project.

In July 2006, Vista announced a spin-off of its existing Nevada properties into Allied Nevada Gold Corp. (Allied) that, concurrently with the spin-off, would acquire the Nevada mining properties of the Pescio Group. In May 2007, Vista and Allied announced that the previous arrangement between Vista, Allied, and the Pescio Group closed.

Reuters noted that Allied filed for bankruptcy protection on March 10, 2015, due to a heavy debt load amid weak metal prices.

In June 2015, Allied announced that the sale of their exploration properties and related assets to Clover Nevada, a wholly owned subsidiary of Waterton, had been approved by the United States Bankruptcy Court for the District of Delaware (Mineral Industry Consultants 2020).

Millennial acquired the Mountain View property in 2021.

2.6. Existing Environment

The Project is situated in rugged terrain in the high desert of the Basin and Range Physiographic Province. It is approximately 20 miles northwest of Gerlach in Washoe County, Nevada. It lies in the Deephole Mining District at the base of the Granite Range at elevations ranging from approximately 4,500 feet above mean sea level (amsl) to 5,800 feet amsl.

Biological and cultural resource surveys were conducted at the Project in 2022. The Project Area supports a mixture of sagebrush and shrublands and juniper woodlands. There are big game species present in the Project Area including mule deer and pronghorn as well as other wildlife including migratory birds, burrowing owls, greater sage-grouse, golden eagles, and raptors.

A Class III cultural resource survey was completed at the Project in 2022. Cultural resource sites were identified and categorized within the baseline boundary and presented in a cultural resource report.

2.7. Acknowledged Activities

Construction of roads, drill pads, and sumps to perform mineral exploration drilling, with an associated surface disturbance of 4.16 acres is acknowledged under Notice NVN-100451. Approximately 3.8 acres of construction has been completed including:

- Roads
- Drill pads and sumps
- Laydown yard

Millennial intends to perform surface disturbance activities and drilling under the Notice until the maximum acknowledged acreage has been disturbed. Upon Plan approval, the Notice will be terminated, and associated surface disturbance will be incorporated into the Plan.

2.8. Proposed Activities

Millennial will assess mineral development potential in the Project Area through expanded mineral exploration and baseline data collection activities. Associated surface disturbance will consist of access road maintenance, overland travel, road and drill pad construction, test pits and trench excavation, laydown yard construction, and monitoring well and production well installations. Millennial has requested occupancy under 43 CFR 3710 Subpart 3715.0-5 and received approval. All exploration activities will be conducted in accordance with the Plan and in a phased manner. Phase I locations have been determined and outlined in the Plan while specific locations of future phase exploration will be developed based on results of data collection from Phase I. The anticipated project duration is ten years.

2.8.1. Overland Travel Routes and Constructed Roads

Millennial will construct new roads to access exploration targets throughout the Project Area. Roads will be constructed with a standard cut and fill method and have an average travel width of 12 feet. Construction will occur in areas with varying topography and considering slope, roads would have a disturbance width of between 12 and 34 feet with an average disturbance width of 13 feet, with safety berms as required. Fill material will be placed at the angle of repose. When constructing new roads in the Project Area, Millennial will use construction practices to minimize surface disturbance, erosion, and visual contrast. Topsoil material removed for road construction will be utilized to build road berms or will be placed so that it facilitates reclamation.

During Phase I, Millennial will construct approximately 109,577 linear feet of new exploration roads and utilize/improve approximately 6,686 linear feet of roads classified as Active on or after October 1, 1990. Future phases could include approximately 419,000 linear feet of new exploration roads (based on an average 13-foot disturbance width).

As shown in **Table 3** below and categorized in the attached RCE in **Appendix A,** the proposed disturbance acreage associated with constructed roads accounts for the angle of the underlying ground slope in which each road segment will be constructed. Roads that are classified as Active on or after October 1, 1990, and have proposed use are also accounted for in **Appendix A**.

Table 3: Phase I Constructed Road Lengths, Slope Angle, and Average Disturbance Width

Road Category by Percent Slope	Underlying Ground Slope (Percent)	Road Width (Feet)	Slope-Adjusted Disturbance Width (Feet)	Length (Feet)
0%-10%	10	12	12.95	56,401
11%-25%	25	12	15.02	43,822
26%-45%	45	12	20.70	6,379
>45%	60	12	33.61	2,975
			TOTAL	**109,577**

Balanced cut-and-fill construction will be used to the extent practicable to minimize the exposed cut slopes and the volume of fill material. Millennial will salvage growth media, as practicable, during construction activities and store it in the form of berms and minor push piles within the disturbance footprint of permitted surface disturbance to facilitate reclamation. Road construction within drainages will be avoided whenever possible. When drainages must be crossed by a road, Best Management Practices (BMPs) established by the NDEP, and Nevada Division of Conservation Districts through the State Environmental Commission (1994) will be followed to minimize the surface disturbance and erosion potential. Blasting or the use of a rock breaker may be necessary to construct roads in areas of outcrop. Routine road maintenance could be required and will consist of snow removal, smoothing ruts, filling holes with fill material, grading, and re-establishing waterbars, when necessary. Millennial will perform access road maintenance as needed including grading, drainage ditches, waterbars, etc. Access road improvements will occur including culvert installations as needed and road widening as shown on **Figure 4.** Road construction and maintenance may be completed with a Cat D7 dozer or a Cat 325 excavator, or equivalent equipment.

Millennial will use overland travel whenever possible, however, no new overland travel routes have been proposed under Phase I. When utilized, overland travel is assumed to have an average surface disturbance width of eight feet. Approximately 52,095 linear feet of overland travel could be used in future phases.

2.8.2. Drill Pads and Drilling Procedures

Millennial will conduct year-round exploration drilling activities, as weather permits, with up to ten drill rigs. Drilling will be performed primarily to define the extent of the mineralization: however, it will also include sampling for geochemical or geotechnical analyses and investigations to support baseline data collection. Up to 315 drill pads will be constructed as part of Phase I. An additional 1,650 drill pads may be constructed under subsequent phases. Up to 13 drill holes may be open at one time (one hole per rig, plus three open holes for RC pre-collaring or from rigs that are mobilizing/demobilizing from a specific drill location). Pre-collaring may be utilized intermittently based on the geology present. RC pre-collaring will occur prior to core drilling and the holes will be abandoned by the core rigs. Drill holes will be vertical or angled to an average depth of 500 feet with a maximum depth of 3,300 feet.

The working area of the standard RC or core drill site constructed at the Project will measure approximately 0.08 acre with typical dimensions of 70 feet long by 40 feet wide. Sumps will be excavated within the pad disturbance footprint to contain cuttings and manage drilling fluids. Typically, sumps will be unlined and measure 10 feet wide by 20 feet long by 10 feet deep for an approximate capacity of 74 cy. Active sumps will be inspected daily during drilling operations. Each sump will be constructed with a sloped end for wildlife egress. Should accidental release from a sump occur, site personnel will follow procedures outlined in the spill response and contingency plan (**Appendix C**). Only non-toxic drilling fluids will be used during drilling.

The actual quantity of surface disturbance associated with each drill pad will vary based on topography. The proposed disturbance associated with the drill pads has been categorized by slope angle and the total disturbance of each segment calculated accordingly as outlined in the attached RCE (**Appendix A**).

Earthwork will be performed with an excavator, Cat D7 dozer, or equivalent equipment. Traditional cut and fill techniques will be utilized. Topsoil removed during the construction will be stockpiled in berms and fill material to facilitate use in reclamation.

Millennial personnel and geologists will typically travel to and from the drill site in a four-wheel drive (4WD) pickup truck.

Standard drill rig crews will typically consist of a drill operator and two helpers. The crew will be transported to and from the drill site in up to three separate 4WD vehicles per rig.

In addition to the equipment specified above, Millennial will utilize various support vehicles/equipment including, but is not limited to; pickup trucks, utility terrain vehicles (UTVs), bulldozer, backhoe, grader, forklift, reach lift, water truck(s), service trucks, lube trucks, mobile water tanks (frac tanks, poly tanks), lay-flat hose, and water transfer pumps.

2.8.3. Test Pits, Trenches and Bulk Sampling

Trenching and test pitting will occur for resource evaluation and geochemical and geotechnical data collection. Millennial will perform bulk sampling as well as geotechnical analysis from trenches and test pits throughout the Project Area. Test pits will generally have dimensions of ten feet wide by ten feet long by five feet deep. Trenches will have a nominal width of five feet with variable lengths and depths depending on need.

Excavation would be performed with a 325 excavator or equivalent. Spoil materials will be stockpiled next the excavation for backfilling during reclamation. Excavations will be fenced with sediment fence or equivalent to provide for public, wildlife, and livestock safety. All trenches and test pits will be backfilled as soon as practicable.

No trenches or test pits are proposed under Phase I. Approximately 4.78 acres of excavations will occur in future phases.

2.8.4. Laydown Yards

Millennial will utilize the two laydown yards for storage of drilling materials, water tanks and ancillary equipment staging. The yards will have an average surface disturbance of 0.1 acre with variable dimensions based on topography. The yards will be fenced with four-strand wire to exclude livestock/wildlife and for security purposes.

It is likely that Millennial will use previously constructed drill pads for equipment staging; however, for purposes of bonding and surface disturbance calculations, two laydown yards have been designated. Construction will be performed with an excavator, Cat D7 dozer, or equivalent equipment. Traditional cut and fill techniques will be utilized, and topsoil removed during the construction will be stockpiled in berms and fill material to facilitate use in reclamation.

Materials stored in yards will generally consist of consumable drilling and abandonment supplies as discussed in Section 3.6, drill steel and light plants. Core and drill cuttings will likely be temporarily stored within the yards until they are transported off site for analysis and long-term storage. The laydown yards may stage up to six 21,000-gallon water tanks for use in drilling and dust suppression. Safety Data Sheets for all materials on site are available in the Spill Response and Contingency Plan included in **Appendix C.**

Millennial will install a modular office building on the western laydown yard during Phase I **(Figure 4)**. The building will measure approximately 10 feet by 20 feet and be utilized for core logging, core documentation, and administrative tasks associated with drilling. The building will be a portable prefabricated structure that will be transported to site. No foundation will be required. Portable toilets will also be utilized; therefore, no septic system is included.

2.8.5. Monitoring and Production Well Sites

Millennial proposes to install eight groundwater monitoring wells during Phase I and approximately eight additional monitoring wells during subsequent phases to assess water levels and water quality in the Project Area. Prior to well construction, Millennial will obtain a waiver to drill a monitoring well for each well, along with an Affidavit to Abandon, per Nevada Administrative Code (NAC) 534.441 and 534.4353. Monitoring well pad surface disturbance is anticipated to be approximately 0.11 acre per site with typical measurements of 50 feet wide by 100 feet long. Whenever possible, existing exploration drill pads will be used for monitoring well installation and expanded if necessary.

Groundwater monitoring wells will be completed with two-inch casing with depths ranging from 67 feet below ground surface (bgs) to 665 feet bgs. It is estimated that groundwater elevations vary between approximately 5,200 feet amsl in the higher elevations and 4,500 feet amsl in the lower elevations of the Project Area. The purpose of the wells is to collect baseline data to characterize the hydrogeology of the Project Area.

Additionally, Millennial proposes to install two production wells for water supply during Phase I of the exploration program. Millennial will apply for a Permit to Appropriate the Public Waters

of the State of Nevada and will await approval prior to well construction. Production well pad surface disturbance is anticipated to be approximately 0.11 acre per site with typical measurements of 50 feet wide by 100 feet long.

Millennial proposes to install at least three vibrating wire piezometers (VWPs) during Phase I **(Figure 4)**. Millennial may also complete borings with the installation of VWPs at opportunistic drill sites in future phases. Each borehole may be equipped with up to four VWPs in fully grouted boreholes to monitor groundwater levels and pressure. The VWPs will be attached to a 0.5 to 1-inch-diameter fiberglass, PVC, or steel rod. Each VWP will be completed with a locking monument cover, electrical connections, and protective bollards, as needed.

2.8.6. Meteorological Station

A meteorological station may be installed within the Project Area as shown on **Figure 4**. The station will include a heated rain gauge, a snow scale, and solar panels. The station would measure the required parameters of temperature, wind speed and direction, relative humidity, pressure, solar radiation, precipitation, and evaporation. The station would be surrounded by a fully enclosed fence and the area within the fence would measure approximately 3,600 square feet (60 feet by 60 feet). The station will be located off an existing or constructed road and constructed in accordance with the Environmental Protection Agency's Meteorological Monitoring Guidance for Regulatory Modeling Applications. The weather station will be fenced with four-strand wire or chain link fence to prevent vandalism.

2.8.7. Hazardous Materials and Petroleum Products

Hazardous materials or petroleum products utilized at the Project will include diesel fuel, gasoline, and lubricating oils and grease stored in vehicles or on drill rigs. Approximately 3,000 gallons of diesel fuel, 200 gallons of lubricating grease, and 200 gallons of lubricating oil will be stored. Approximately 500 gallons of gasoline will be stored in fuel delivery systems for all light vehicles and tanks. Any oil and grease stored on the drill pads will be placed on secondary containment. All hazardous and non-hazardous containers will be properly labeled and managed in accordance with all applicable state and federal laws, regulations, and guidelines.

If a reportable quantity of hazardous materials or petroleum products are spilled, the spill will be contained and cleaned up and the appropriate federal, state, and local agencies will be notified as required. If any products are spilled during operation that are less than the reportable quantity, the product will be promptly cleaned up and any contaminated material will be removed from site and disposed of at an approved off-site facility in accordance with all applicable federal, state, and local laws.

2.8.8. Power and Support Services

Up to four 500kW generators will be utilized on site for power for the production water wells and pumping of water via portable hose-line to drilling pads.

Outside power and support services are not included in this Plan. The Project is focused on mineral exploration and baseline data collection activities.

2.8.9. Water Use and Conveyance

Water will be required for borehole, well drilling and development, and dust management and a hose will be utilized to convey water to the drill pads. Initially, water for project use will be trucked in from Gerlach or from a neighboring ranch. Millennial proposes to install up to two production wells for water supply during Phase I of the exploration program. Water will be consumed and, except for aquifer testing, will not be discharged to any creeks or drainage or otherwise infiltrated in significant amounts. Water discharged during aquifer testing will be directed towards drainages and a temporary discharge permit will be acquired from the NDEP prior to discharging. If required, well water will be sampled and tested for the NDEP Profile I suite of constituents. The NDEP permit for the water supply well and use would require compliance with all existing water rights and groundwater protections.

Water usage is estimated to average 80,000 gallons per day (gpd) during active drilling periods, with a range from 45,000 to 270,000 gpd. Of the 80,000 gpd, 20,000 gpd is estimated for dust suppression. The amount of water used for dust suppression activities depends on the type and intensity of activities occurring that day on site, seasonality, and weather conditions. An estimated 20,000 gpd is estimated to support active reclamation activities. It is not anticipated that water will be used after initial reclamation activities are complete. Any water applied in the Project Area will be in conformance with Nevada Division of Water Resources (NDWR) regulations and water rights permits will be acquired for the Project.

2.8.10. Surface Occupancy

Millennial is requesting occupancy for the Project according to 43 CFR 3710 Subpart 3715.0-5 and activities may include the following:

- A modular office building that will be utilized for core logging, core documentation, and administrative tasks associated with drilling;
- Up to six 21,000-gallon water storage tanks located at designated laydown yards;
- 20-cubic-yard dumpsters, fuel storage tank, vehicle parking, mobile equipment, pipe trucks, drill rigs, light generators, generators, and other drilling supplies within the laydown yard;
- Four-strand wire fence around laydown yards;
- Use of up to ten portable toilet facilities (one at each active drill rig);
- Up to two water supply wells, which will each have surface features including casing, well head cover, and bollards, as needed;
- A hose-line that will convey water to the drill pads;
- Groundwater monitoring wells, which will each have surface features including casing, well head cover, and bollards, as needed;
- Installation of VWPs, which will each have surface features including casing, electrical connections, and bollards, as needed; and,
- A fenced meteorological station.

2.8.11. Spill Response and Contingency Plan

The Spill Response and Contingency Plan is included in **Appendix C.**

2.8.12. Rock Characterization and Handling Plan

Not applicable.

2.8.13. Quality Assurance Plan

Not applicable; however, quality assurance for reclamation is addressed under the Reclamation Plan included in **Section 3.**

2.8.14. Other Plans

Not applicable.

2.8.15. General Schedule of Operations from Start through Closure

Pending approval of the Plan, Millennial anticipates exploration to begin during the 2025 field season. The schedule for reclamation is included in Section 3.5.

2.8.16. Environmental Protection Measures

Millennial commits to abiding by the following environmental protection measures (EPMs) to prevent unnecessary and undue degradation during construction, operation, and reclamation of the Project. The measures have been developed from the general requirements established in the BLM's Surface Management Regulations (43 CFR 3809) and the NDEP-BMRR mining reclamation guidelines. Other environmental regulations and guidelines including water and air quality are included.

2.8.16.1. Air Quality

Roads will be watered as necessary to minimize fugitive dust. Vehicle traffic will be minimized to the extent possible to control fugitive dust. Natural variations in annual and seasonal precipitation will require a flexible water application schedule to ensure dust is abated without excessive water use. Section 2.8.16.11 of the Plan of Operations states that Project personnel will observe designated speed limits and will maintain a safe speed for existing road and weather conditions. A standalone Class II Surface Area Disturbance Permit will be obtained per NAC 445B.22037 when surface disturbance exceeds 5.0 acres in size. Workers and supervisors will undergo training to identify measures to prevent or reduce the risk of exposure to fugitive dust.

2.8.16.2. Cultural Resources

A Class III cultural resource survey was performed within the entirety of the 3,328-acre Project Area. The types and locations of cultural resources within this area have been documented. All Historic Properties and Unevaluated sites will be avoided by Millennial NV LLC during all phases of Project implementation. Avoidance will be facilitated by Millennial NV LLC using applicant committed measures by utilizing archaeological monitors or erecting physical

barriers, such as fencing or flagging, to prevent impacts when Millennial NV LLC is working in the vicinity of sensitive cultural resources (Historic Properties & Unevaluated Sites).

If previously unknown cultural resources (including, but not limited to human remains, funerary objects, or items of cultural patrimony) are encountered on BLM-administered land during Project construction or implementation, activities within 100 meters (330 feet) of a discovery will cease and the BLM Authorized Officer (AO) will be notified, in accordance with Section VI.B.1. of the State Protocol Agreement between the Bureau of Land Management, Nevada and the Nevada State Historic Preservation Officer for Implementing the National Historic Preservation Act (Revised December 22, 2014).

The location of the find will not be publicly disclosed, and the remains will be secured and preserved in place. If human remains are discovered, Millennial NV LLC or its contractors will also immediately notify the Washoe County Sheriff of the discovery. Any discovered Native American human remains, funerary objects, or items of cultural patrimony found on federal land will be handled in accordance with the Native American Protection and Repatriation Act (NAGPRA). Non-Native American human remains will be handled in accordance with Nevada state law. An evaluation of the resource will determine any subsequent actions to be taken. Project activities will not recommence in the isolated area until a Notice to Proceed is issued by the BLM.

Millennial NV LLC will inform all field personnel of their responsibilities to protect cultural resources and report inadvertent discoveries. Millennial NC LLC will also inform all field personnel of various regulations and penalties in place to protect these resources, including the Archaeological Resources Protection Act of 1979 and the Native American Graves Protection and Repatriation Act of 1990 (Public Law 101-601).

Millennial NV LLC will not knowingly disturb, alter, injure, or destroy any scientifically important Paleontological Deposits. In the event that previously undiscovered paleontological resources are encountered, work in the areas will cease and they will be left intact and brought to the attention of the BLM. If significant paleontological resources are encountered, avoidance, recordation, and/or data recovery may be required, as determined by the BLM.Project personnel will be made aware that cultural resources exist in the Project Area. Millennial will ensure that all personnel know that disturbing or collecting artifacts is illegal. Personnel will immediately notify Millennial if any cultural resources are found within or near the active exploration areas.

2.8.16.3. Drill Hole Abandonment and Water Quality

Mineral exploration and development drill holes and monitoring wells subject to NDWR regulations will be abandoned in accordance with NAC 534.

Drill holes may be pre-collared with an RC drill rig, in which case the hole will remain open after the RC drill rig moves off the hole and until the core rig moves onto the hole for completion. The pre-collars will be temporarily capped to prevent wildlife entry until the core rig mobilizes

to the site. The hole will be plugged according to applicable rules and regulations after the core rig completes drilling.

Boreholes will be sealed to prevent cross contamination between aquifers and the required shallow seal will be placed to prevent surface contamination. Well abandonment methods will differ based on well hydrologic conditions and types of casing. If any drill hole produces artesian flow, it will be contained pursuant to NRS 534.060 and NAC 534.378 and sealed pursuant to NAC 534.420. Otherwise, the casing will be completely removed from the drill hole and plugged in accordance with NAC 534.4369 and NAC 534.4371.

Only nontoxic materials will be used during drilling. Drill cuttings and drilling fluid products used during drilling and abandonment operations will be contained and deposited into sumps. Sumps are designed to contain an manage the water inflow during drill operations. If groundwater is discharged from the sump, drilling fluids and solids will be allowed to settle prior to discharge. Discharge rates from the sump will not exceed the threshold volume of 250 gallons per minute over 48 hours.

Drill pads will not be constructed in springs. Any construction or operations within 300 feet of a spring will employ stormwater BMPs to control sediment and protect surface water.

2.8.16.4. Erosion Prevention

Stormwater BMPs will be implemented as needed for construction, operation, and reclamation. Equipment will not operate when excess resource damage and/or sediment transport are likely to occur due to unfavorable ground conditions. To control stormwater, drainage structures including waterbars, borrow ditches, and culverts will be installed where necessary. Sediment control structures will include certified weed-free straw bale filter fences, siltation or filter berms, mud sumps, and/or downgradient drainage channels to prevent sedimentation.

2.8.16.5. Fire Protection

Vehicles and equipment operated on public and private lands and roads must be equipped with spark arrestors and fire suppression tools including a conventional fire extinguisher, a shovel, five gallons of water (preferably in a backpack pump), and other appropriate supplies. Adequate firefighting equipment including a Pulaski, fire extinguisher, and an ample water supply must be readily available at each active drill site. Vehicle catalytic converters will be inspected frequently and cleaned of all flammable debris. Wildland fires will be reported as soon as possible to the BLM Central Nevada Interagency Dispatch Center at (775) 623-3444. Reports will include the location of the fire, what is burning, the time it started, and the direction of the spread if information is available and/or known. Personnel will be made aware of any local fire restrictions or closures issued by the Winnemucca District Office. No open fires are permitted and all cutting, welding, and grinding operations will be conducted in an area free from vegetation.

2.8.16.6. Growth Media Management

Growth media will be salvaged and stockpiled within designated areas during stripping or grading/surface clearing. Growth media will be pushed into berms or small stockpiles within each pad or yard and within the fill material of constructed roads. Larger stockpiles will be graded to reduce slope erosion. BMPs, such as straw bales or silt fences, will be used as necessary to contain sediment resulting from precipitation.

2.8.16.7. Hazardous and Solid Wastes

Hazardous or solid wastes will consist primarily of petroleum products, including greases, oils, etc. used in the maintenance of equipment. These products will be stored on drill support vehicles or on the drill rig itself.

No hazardous or toxic waste, oil, or lubricants will be disposed of on public lands or in sumps. Burial and/or burning of trash or other debris is not permitted. All wastes will be collected in approved trash bins/containers with lids and will be disposed of off-site in an approved landfill on a regular basis. Hazardous materials will be transported according to applicable regulatory guidelines.

Pursuant to 43 CFR 8365.1-1(b)(3) and 43 CFR 3809.420(b)(5) and (6), no sewage petroleum products, or refuse will be dumped from any trailer or vehicle at the Project.

All spills, regardless of quantity, will be addressed and the material will be removed for proper disposal. The Spill Response and Contingency Plan is included in **Appendix C**.

2.8.16.8. Native American Religious Concerns

In accordance with 43 CFR Part 10.4 (g), Millennial will notify the BLM authorized officer immediately upon the discovery of human remains or funerary, sacred, or cultural patrimony objects (as defined in 43 CFR Part 10.2). All activities will be halted in the vicinity of the discovery and activities will not be restarted for at least 30 days or upon receipt of approval to proceed from the BLM authorized officer.

2.8.16.9. Noxious Weeds

Noxious weeds will be controlled through the implementation of the following BMPs: concurrent reclamation efforts, operator control, removal of invasive, non-native, and noxious weeds on reclaimed areas, and avoiding areas of known invasive, non-native, and noxious weeds during periods when the weeds could be spread by vehicles. Millennial will contact the BLM for concurrence prior to any proposed weed control program involving application of chemical treatments on public lands. A Weed Management Plan is included in **Appendix E** for additional information.

2.8.16.10. Paleontological Resources

Millennial will immediately contact the BLM authorized officer if any undiscovered paleontological resources are encountered. The artifacts will be left intact, and work will stop in the immediate area.

2.8.16.11. Safety and Security

Public safety will be maintained throughout the life of the project. All equipment will be maintained in a safe and orderly manner. Project personnel will observe designated speed limits and will maintain a safe speed for existing road and weather conditions.

2.8.16.12. Vegetation

Millennial will adhere to BLM recommendations for seed mix species, application rates, and seeding methods. Seeding information is outlined in Section 3.0.

2.8.16.13. Visual Resources and Lighting

Existing utility corridors, roads, and previously disturbed areas will be utilized whenever possible to minimize visual intrusion.

Proposed exploration drilling activities may occur 24-hours a day, 7-days a week, 365-days a year. Lighting will be required for operations, safety and security during the night. All lighting currently proposed for the project is temporary and/or equipment mounted. One approximately 15-foot-tall light plant tower will typically be placed at each drill site and in the laydown yards. To minimize effects from lighting, Millennial will implement the following BMP's where applicable. Lighting will be directed onto active sites only and away from adjacent areas not in use to promote safety and proper lighting of the active work areas. All light fixtures will be hooded and shielded, if applicable. Regular maintenance will be implemented to keep lighting clean of dirt, dust, and debris. Lighting design (i.e., Amber LED) will be utilized to the extent possible.

2.8.16.14. Wildlife

Light vehicles will adhere to designated speed limits within the Project Area for the safety of wildlife and livestock. Sumps and other small excavations that pose a hazard or nuisance to the public, wildlife, or livestock will be adequately fenced, then backfilled or covered within 30 days of completion of drilling to preclude wildlife and livestock access. One end of each sump will be sloped to provide a wildlife escape route.

The Migratory Bird Treaty Act prohibits the destruction of nests with eggs or of young migratory birds. When possible, surface disturbance will be conducted outside of the nesting season (March 1 to August 31). Clearance surveys of each area planning to be disturbed will be conducted during nesting season to protect nests with eggs or young if they are present. If nests or young are found, the immediate area will be avoided to prevent destruction of the nest and disturbance of the nesting birds.

Greater sage-grouse may use this area for winter, breeding, and/or summer habitat. Millennial will avoid disturbing and displacing these birds and will try to reduce sagebrush destruction where possible. Consistent with the 2015 Approved Resource Management Plan Amendment (ARMPA), and as determined by the BLM in coordination with NDOW, any surface disturbing activities involving mineral exploration and rights-of-way actions (with the possible exception of short duration activities outside of seasonal GRSG habitats) will require monitoring of active

and pending leks annually within 4 miles during years of active disturbance. Any leks monitored by Millennial would be coordinated with NDOW prior to the breeding season. Millennial will fund the services of an independent qualified biologist approved by the BLM, in coordination with NDOW, consistent with applicable law. Where possible, Millennial would restrict permitted activities from March 1 through May 15 within two miles of active Greater sage-grouse leks in compliance with SS-41 of the ARMPA. If drilling were to occur during the breeding season (March 1 to May 15), Millennial would employ the following measures:

- Access to the exploration sites in the Project area, if the access roads are within a quarter mile of active leks, would not occur between the hours of 5 a.m. to 9 a.m. during the greater sage-grouse breeding season of March 1 to May 15 to minimize impacts to leks;
- Consistent with Action SSS 7), drilling setback distances determined by the noise model for the project would be adhered to during lekking season, and noise shields (consistent with RDF LOC 1) would be used to reduce noise levels to within acceptable levels. Seasonal timing restrictions would be employed if noise restrictions cannot be met (Action SSS 6).

As additional noise-related research and information emerge, specific new limitations appropriate to the type of projects would be considered and evaluated and appropriate measures would be implemented where necessary to minimize the potential for noise impacts on GRSG populations.

Portions of the Project Area occur within crucial summer and winter mule deer and pronghorn habitat. Millennial will try to avoid activities that may disturb/displace these animals between November 15 and April 30 as well as during the summer. In addition, there are occupied distributions of bighorn sheep in and around the Project Area. Millennial will avoid disturbing and displacing these animals.

Sensitive bat species and raptors, including golden eagles, may be present in the Project Area. A Bird and Bat Conservation Strategy (BBCS) has been developed which outlines conservation measures that may be implemented to reduce and avoid impacts to birds and bats. The BBCS also outlines a standardized approach to monitoring for avian and bat fatalities that will be used during all phases of the Project. The BBCS is included in **Appendix D**.

3. Reclamation Plan

Reclamation of disturbed areas resulting from activities performed under this Plan will be completed in accordance with BLM and NDEP regulations. Millennial will comply with 43 CFR 3809.420 and NAC 519 to prevent unnecessary or undue degradation of public lands. Reclamation will meet the objectives as outlined in revegetation success standards per the "Nevada Guidelines for Successful Revegetation for the Nevada Division of Environmental Protection, the Bureau of Land Management, and the USDA Forest Service," September 2016. The goal of reclamation will be to stabilize the site and return the Project area to a productive community with post Project land use consisting of wildlife habitat, livestock grazing, recreation, etc.

Surface disturbance will be reclaimed after the completion of all Project activities. Concurrent reclamation may occur throughout the life of the project on areas that are no longer needed to support exploration related activities. Reclamation will involve regrading disturbed areas to their approximate contour and seeding using the BLM approved reclamation seed mix and application rates. Reclamation is intended to return disturbed land to a level of productivity comparable to pre-exploration levels.

Annual visits to monitor the success of the revegetation will be conducted for a period of up to three years or until revegetation success has been achieved.

Table 4: Proposed Revegetation Seed Mix

Species Common Name	Species Scientific Name	Pounds per Acres (Pure Live Seed)
Fourwing saltbrush	*Atriplex canescens*	3
Blue flax	*Linum lewisii*	0.5
Bluebunch wheatgrass	*Pseudoroegneria spicata*	2.5
Sandburg bluegrass	*Poa secunda*	1
Squirreltail grass	*Elymus elymoides*	2
	Total	**9**

3.1. Noxious Weeds and Invasive, Non-Native Species

As described in the Weed Management Plan included in **Appendix E**, Millennial will be responsible for controlling noxious weeds and other non-native invasive plant species until revegetation is considered successful by both the BLM and NDEP-BMRR. If needed, Millennial will submit a Pesticide Use Proposal to obtain approval from the BLM for specific herbicide application types and quantities. All pesticide application records will be submitted to the BLM following treatment efforts. Only certified weed-free seed consisting of an approved BLM seed mix will be used for reclamation seeding.

Millennial will conduct biennial weed surveys to document weed populations and control efforts. Monitoring and spraying will continue until reclamation is complete and the potential

for weed invasion is minimized. Certified weed-free straw bales will be used for sediment control as appropriate.

3.2. Drill Hole Plugging

Drill holes will be plugged in accordance with NRS 534, NAC 534.4369 and 534.4371. If groundwater is encountered the hole will be plugged pursuant to NAC 534.420. If casings are set in a borehole, either the boreholes will be completed as wells and plugged pursuant to NAC 534.420 or the casings will be completely removed from the boreholes and plugged pursuant to NAC 534.4369 and 534.4371. Drill holes will be sealed to prevent cross contamination between aquifers and the required shallow seal will be placed to prevent contamination by surface access. If Millennial intends to leave any hole(s) open, a waiver will first be obtained from the NDWR. There will be approximately eight groundwater monitoring wells and two production wells during Phase I that are included in the RCE. Reclamation costs for VWPs are included within the Other Demolition and Equipment Removal tab of the RCE. These costs include demolishing the well monument and removal of casing and wires above the ground surface. Geotechnical auger holes will be backfilled with drill cuttings and surface material.

Up to 13 open drill holes are included in the RCE consisting of one open hole per rig and three pre-collars. No drill holes will be left open at the end of the Project.

3.3. Regrading and Reshaping

Regrading and reshaping of all proposed disturbance including drill sites, sumps, constructed roads, test pits, trenches and laydown yards will be recontoured to match the surrounding landscape and to minimize erosion following completion of Project activities. Reseeding activities will occur following regrading and reshaping and will generally take place in the fall season.

Road cuts will be filled with fill material to restore the slope to natural contours. The proposed surface disturbance associated with the construction activities has been categorized by slope angle and the total disturbance of each segment calculated accordingly as outlined in the RCE in **Appendix A.** Constructed roads and drill sites will be regraded and reshaped with an excavator. Overland travel routes are estimated to have an eight-foot travel width (the width of two tracks). Tire tracks from overland travel routes will be scarified to relieve compaction, prevent erosion from runoff, and prepare the seed bed.

If any existing roads are degraded from Project activities, Millennial will return them as close as possible to their original condition.

If drainages are disturbed, they will be reshaped to pre-construction contours, resulting in channels of the same capacity as upstream and downstream reaches. Channels will be made to prevent erosion and ultimately be revegetated. Disturbed areas will be broad-cast seeded with a BLM-approved seed mix following completion of earthwork.

3.4. Handling of Growth Media

Potential growth media will be stored as berms and push piles created during construction activities. Localized berms and push piles are preferred for storing growth media, as opposed to being stored at a large central location, to prevent anaerobic conditions that can form in large stockpiles. Distribution of the stored growth media during the earthwork portion of reclamation will allow for effective recontouring and seedbed preparation prior to reseeding. Reclamation will be initiated at the earliest economically and technically feasible time on portions of disturbance that are no longer needed to support exploration activities for the Project. Soil amendments will not be necessary in areas where sufficient growth media are available.

3.5. Revegetation

The plan for revegetation is designed to return disturbed areas to conditions that are similar to the existing dominant vegetation community structure. The proposed seed list for the Project (**Table 4**), is based on known soil and vegetative conditions in the midslope range from 4,500 to 6,000 feet amsl. It was selected to establish a plant community that will support post-Project land use. The seed mixture is made up of native species found in the plant communities prior to disturbance. Revegetation will be in accordance with a BLM approved seed mix before seeding begins. Broadcast seeding will occur at a rate of 9 pounds of pure live seed (PLS) per acre. The BLM and NDEP-BMRR will be consulted if any changes are needed to the plant list or application rate. The BLM approved seed mixture will be certified PLS and weed-free and any straw bales used for erosion control will also be certified weed-free.

Seedbed preparation and seeding will generally take place in the fall season after regrading and reshaping the disturbed areas. All reclaimed areas will be broadcast-seeded with a cyclone-type bucket spreader or a mechanical blower and raked to provide seed cover and enhance germination. Reclaimed surfaces will be left in a rough condition to enhance moisture retention and revegetation success while also minimizing the potential for erosion.

The timing of revegetation activities is imperative, and seeding will be timed to take advantage of optimal climatic periods. Seedbed preparation will generally be completed in the fall, either concurrently with or immediately prior to seeding. Seeds will be sown in late fall to take advantage of winter and spring precipitation and optimum seed germination. Early spring seeding may be performed in areas not seeded in the fall. Seeding will not be completed when the ground is frozen, or snow covered.

In accordance with BMRR guidance document “Attachment A for Exploration Projects Documentation of Reclamation Activities for Surety Release” September 2020, monitoring will occur at least three years after revegetation to determine the success of revegetation, and will continue until BLM approval of Attachment A document and release of surety. A detailed calculation of reclaimed acreage and a field inspection will be conducted prior to a request for surety release.

3.5.1. Wildlife Habitat Rehabilitation

Wildlife habitat will be restored and enhanced through successful revegetation. The seed mix and reclamation techniques proposed in the Reclamation Plan will convert the disturbed areas back to a sagebrush/scrub dominated habitat.

3.6. Isolation, Removal, or Control of Acid-Forming, Toxic, or Deleterious Materials

All refuse generated at the Project will be disposed of in the dumpster on site. The dumpster contents will be taken to an authorized off-site landfill facility, consistent with all applicable federal, state, and local regulations. The dumpster will be emptied as necessary depending on the level of use.

Water and non-toxic drilling fluids including abantonite, Alcomer 120L, bentonite, EZ-mud, polypus, and super plug will be utilized as necessary during drilling and will be stored at the Project. Hazardous or petroleum materials utilized at the Project include diesel fuel, gasoline, solvents, lubricating grease, and oil. Approximately 3,000 gallons of diesel fuel will be stored in fuel delivery systems for vehicles and drill rigs. Approximately 500 gallons of gasoline will be stored in portable storage tanks or vehicle slip tanks for light vehicles. Approximately 200 gallons of lubricating grease and 200 gallons of oil will be stored on the drill rigs or transported by drill trucks. All containers of hazardous and non-hazardous substances, including petroleum products, will be clearly and appropriately labeled, and placed in secondary containment. Containers will be handled in accordance with OSHA requirements. If a reportable quantity of hazardous or petroleum materials is spilled, spill response protocols will be followed according to **Appendix C.** The NDEP and Emergency Response Hotline will be notified if required. Any spills will be cleaned up in a timely manner. Contaminated material will be removed from site and disposed of at an approved facility in accordance with all applicable federal, state, and local regulations.

3.7. Removal or Stabilization of Buildings, Structures, and Support Facilities

The modular office building, fencing, and culverts will be removed (sold or salvaged), demolished (disassembled), and/or disposed of in an off-site landfill at project closure, as appropriate.

3.8. Quality Assurance

Personnel will perform quality assurance inspections during Project reclamation activities. Quality assurance inspections include but are not limited to the following items:

- Recontouring will be inspected to ensure that the reclaimed areas blend in with the surrounding topography;
- Seed tags will be inspected to verify that the seed mix is certified weed-free;

- Reseeded areas will be inspected to evaluate the vegetation success and for noxious weed populations;
- Reclaimed disturbance will be inspected for evidence of erosion and to determine whether BMPs need to be installed.

Corrective action will be taken promptly to correct any issues found during the inspections.

3.9. Post-Closure Management

Post-closure management will commence following Project reclamation work. A three-year post-closure management period is assumed following completion of Project reclamation for bonding purposes. However, post-closure management will continue until the site reclamation has been accepted by both the BLM and the BMRR. For sites reclaimed early in operations, management of the sites will occur concurrently with operational site management. Annual reclamation reports showing reclamation status with be submitted to the BLM and NDEP.

3.10. Effect of Proposed Reclamation on Public Safety

No unnatural hazards will exist during or after reclamation in the reclaimed areas. Sumps will be backfilled, and Project materials and refuse will be fully removed from site. Per the environmental protection measures in Section 2.8.16, all Project personnel will adhere to safety guidelines throughout the life of the project and during reclamation activities.

4. Monitoring Plan

Monitoring of the exploration disturbance includes periodic visual inspections of the drill pads, including sumps, during and after drilling operations to ensure that all applicable environmental protection measures are being followed. Specifically, drill sumps will be inspected to ensure cuttings are contained and that temporary fencing is present and in good condition. Additional sump capacity will be dug and/or incorporated into the fluid management system if sump containment is found to be inadequate. If fencing is missing, damaged, or inadequate, conditions will be corrected in a timely manner. Millennial will provide drillers with the environmental protection measures listed in Section 2.8.16. If these measures are not followed, corrective action will be taken. Monitoring associated with reclamation activities is included in the Reclamation Plan (Section 3).

5. Interim Management Plan

The following discussion includes topics pertinent to the planned exploration activities.

5.1. Measures to Stabilize Excavations and Workings

The planned exploration activities do not include mine excavations or workings. The constructed roads, pads, and sumps will be maintained in operating condition until reclamation to prevent washouts and containment breaches.

5.2. Measures to Isolate or Control Toxic or Deleterious Materials

All refuse generated by the Project will be disposed of at an authorized landfill facility off site and disposed of in accordance with all applicable federal, state, and local regulations. Millennial will use dumpsters that will be placed in the laydown yard during project activities.

5.3. Provisions for the Storage or Removal of Equipment, Supplies, and Structures

All non-essential motorized exploration equipment will be removed from the Project Area during extended periods of non-operation or seasonal closure.

5.4. Measures to Maintain the Project Area in a Safe and Clean Condition

Millennial will ensure that all trash is placed in the dumpsters and that the site remains trash-free. Open sumps will be backfilled or left in a safe condition with fencing. Routine road maintenance may be required occasionally and will consist of smoothing ruts, filling holes with fill material, grading, and reestablishing waterbars.

Periods of non-operation are not anticipated; however, if temporary closures are required, the drill rig will demobilize from the Project and sumps will be flagged. As soon as the sumps have dried, they will be backfilled. Sumps will typically be backfilled within four months of drilling completion dependent on seasonal conditions.

Dumpsters will be hauled off site and no exploration materials will be left on site. All drill sites will be inspected after Project completion to scatter and cover any cuttings piles, fill ruts, and perform general cleanup. No core samples will be left on site during periods of non-operation or after the completion of Project activities.

5.5. Plans for Monitoring Site Conditions during Periods of Non-Operation

Periods of non-operation are not anticipated; however, the measures outlined in Section 5.6 will be utilized dependent on weather and ground conditions.

5.6. A Schedule of Anticipated Periods of Temporary Closure

Millennial may temporarily suspend exploration field work intermittently throughout the Project timeline. Work will not cease for a period of greater than three years. Millennial will notify the BLM and NDEP in writing 90 days prior to three years of inactivity or final cessation of further operations. The notification letter will state the nature and reason for the suspension of work, the anticipated duration of the suspension, and any event that will reasonably be expected to result in either the resumption of activities or the abandonment of the operation. Millennial will not notify the BLM and NDEP of a temporary closure caused by weather and ground conditions.

6. Assumption of Reclamation Responsibility

Millennial hereby agrees to assume responsibility for the completion of reclamation work described within this document on surface areas affected by the implementation of this project.

7. Reclamation Permit Application Fee

In accordance with NAC 519A.225(1), the fee for an exploration project is $3.10 for each affected and unreclaimed acre of public land and $5.15 for each affected and unreclaimed acre of private land included in the Plan for reclamation.

Table 5: Reclamation Permit Application Fee Calculation

Acreage	Land Status	Fee/Acre	Total Fee
400	Public Land	$3.10	$1,240.00
0	Private Land	$5.15	$0
		TOTAL FEE	**$1,240.00**

Millennial will submit this fee electronically to the NDEP.

8. Reclamation Cost Estimate

The Reclamation Cost Estimate (RCE) and written description of model input values are included as **Appendix A** to this Plan**.** A reclamation bond is required by the BLM and State of Nevada to guarantee the completion of Project Reclamation. Millennial utilized the official Nevada Standardized Reclamation Cost Estimator (SRCE) software that was developed in accordance with the Nevada Standardized Unit Cost project, a cooperative effort between the NDEP, the BLM, and the Nevada Mining Association, to estimate the cost of reclamation The total RCE for the proposed disturbance of 75.46 acres as described in the Plan is $------.

9. Acknowledgements

This Reclamation Plan is consistent with the Plan of Operations.

A. It is understood the operator agrees to accept reclamation responsibility for all surface areas affected by the project as outlined in this Reclamation Plan, and an acceptable surety, pursuant to NAC 519A.350, will be provided in an amount sufficient to ensure reclamation of the entire area affected by the project as required by NAC 519.360.

B. It is understood should the nature of the operation change, a modified or supplemental Reclamation Plan may be required.

C. It is understood the approval of this Reclamation Plan does not constitute:

a. Certification of ownership to any person named herein; and

b. Recognition of the validity of any mining claim herein.

D. It is understood a bond equivalent to the actual cost of performing the agreed upon reclamation measures will be required prior to Reclamation Plan approval and proposed construction activities. The bond amount required, increased or decreased, will be set on a site-specific basis by the lead agency in coordination with the cooperating agencies.

E. It is understood approval of the Reclamation Plan does not relieve the operator of responsibility to comply with all applicable State or Federal laws, rules, or regulations.

F. It is understood any information provided with the Reclamation Plan marked 'Confidential' will be treated in accordance with the agency's laws, rules, and regulations.

I/We have read and agree to comply with all conditions in the Reclamation Plan, including recommended changes and reclamation requirements. I/We understand the bond will not be released until the lead agency provides written approval of the reclamation work done and authorizes such release. I/We further understand the disturbance report and fees required to be submitted annually to the State of Nevada are required until such time as written approval of completion of all reclamation work and closure of the project is provided by all appropriate regulatory agencies.

_____

Print Name

_____ _____

Signature of Operator or Authorized Official Date

10. References

Cedar Creek. 2024. Baseline Aquatic Resource Report for the Mountain View Exploration Project. April 2024.

Cedar Creek. Bird and Bat Conservation Strategy for the Mountain View Project. January 2023.

Cedar Creek. Weed Management Plan for the Mtn. View Project. January 2023.

Cedar Creek. 2024. Biological Baseline Report Mountain View Exploration Project. February 2024.

Environmental Protection Agency. Meteorological Monitoring Guidance for Regulatory Modeling Applications. February 2000.

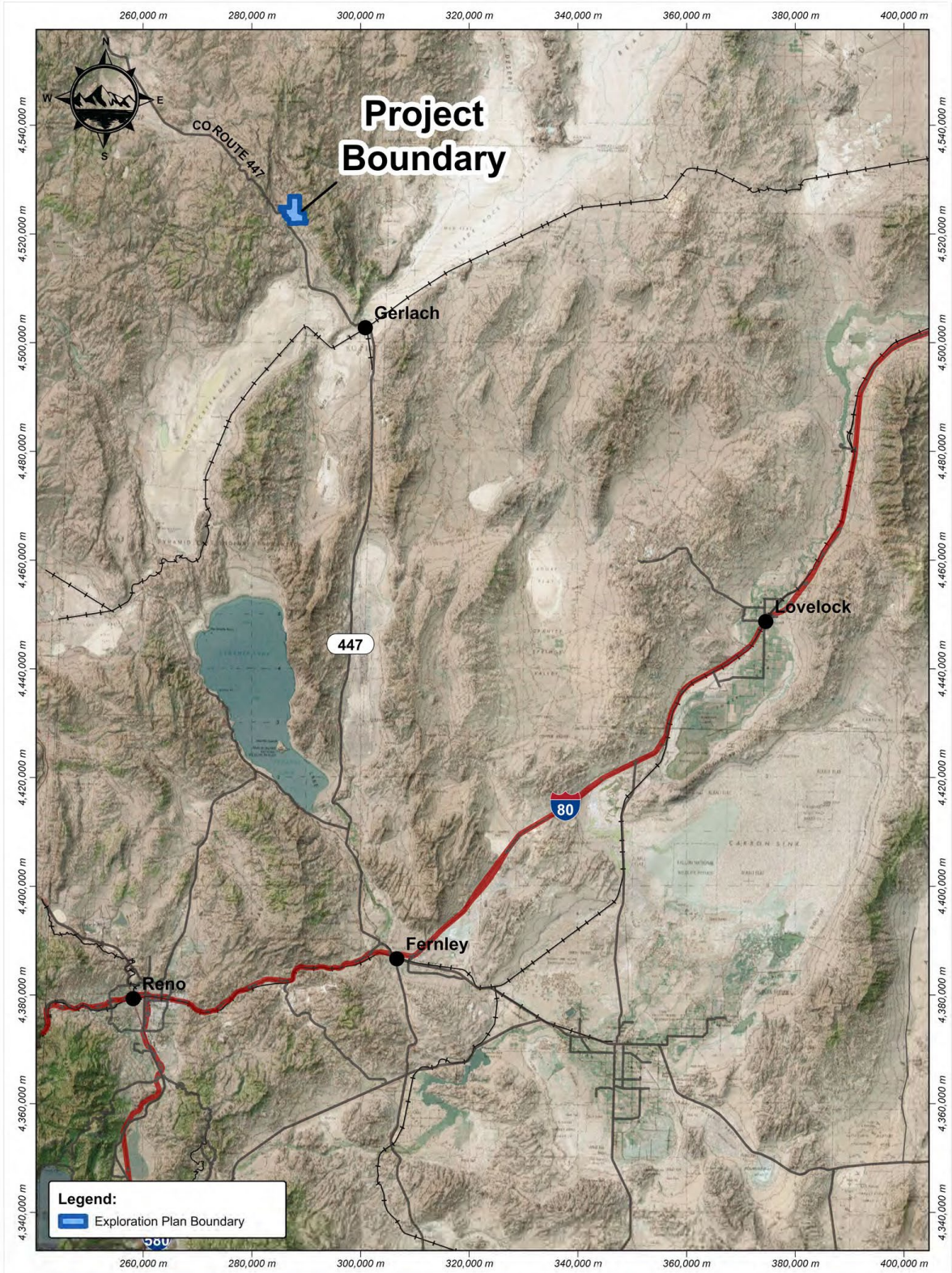
Mineral Industry Consultants. Millennial Silver Corp. NI 43-101 Technical Report Resource Estimate for the Mountain View Project Washoe County, Nevada United States. November 25, 2020.

Nevada Division of Environmental Protection. Attachment A for Exploration Projects Documentation of Reclamation Activities for Surety Release. Revised September 2020.

Nevada Division of Environmental Protection. Nevada Guidelines for Successful Revegetation for the Nevada Division of Environmental Protection, The Bureau of Land Management, and the United States Forest Service. Bureau of Land Management and the Nevada Division of Environmental Protection – Bureau of Mining Regulation and Reclamation. Revised September 2016.

State Conservation Commission. Best Management Practices Handbook. December 1994.

Figures



NOTES:

COORDINATE SYSTEM:

Name: NAD 1983 UTM Zone 11N
PCS: NAD 1983 UTM Zone 11N
GCS: GCS North American 1983
Datum: North American 1983
Projection: Transverse Mercator
Map Units: Meter

SUNSTONE ENVIRONMENTAL SOLUTIONS

MILLENNIAL PRECIOUS METALS

DRAWN BY: LanceReinsel

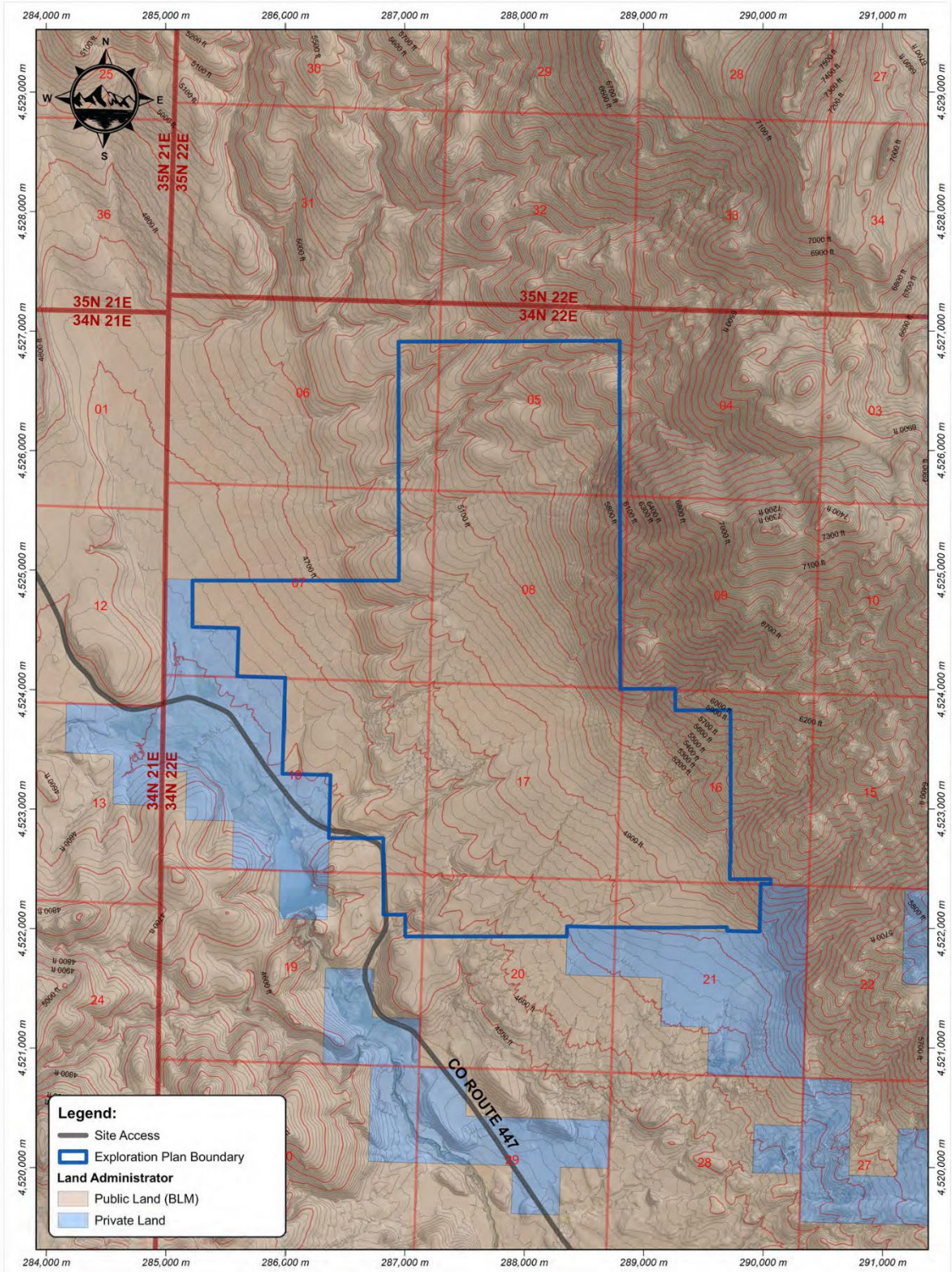
SCALE: 0 5 10 Miles 1:660,000

DATE: 5/19/2025

Millennial NV, LLC

Figure 1:
Mountain View Project
Location Map

*Figure 1 - Project Location Map_BszP



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COORDINATE SYSTEM:

Name: NAD 1983 UTM Zone 11N
PCS: NAD 1983 UTM Zone 11N
GCS: GCS North American 1983
Datum: North American 1983
Projection: Transverse Mercator
Map Units: Meter

SUNSTONE ENVIRONMENTAL SOLUTIONS

MILLENNIAL PRECIOUS METALS

DRAWN BY: LanceReinsel

SCALE:

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Feet

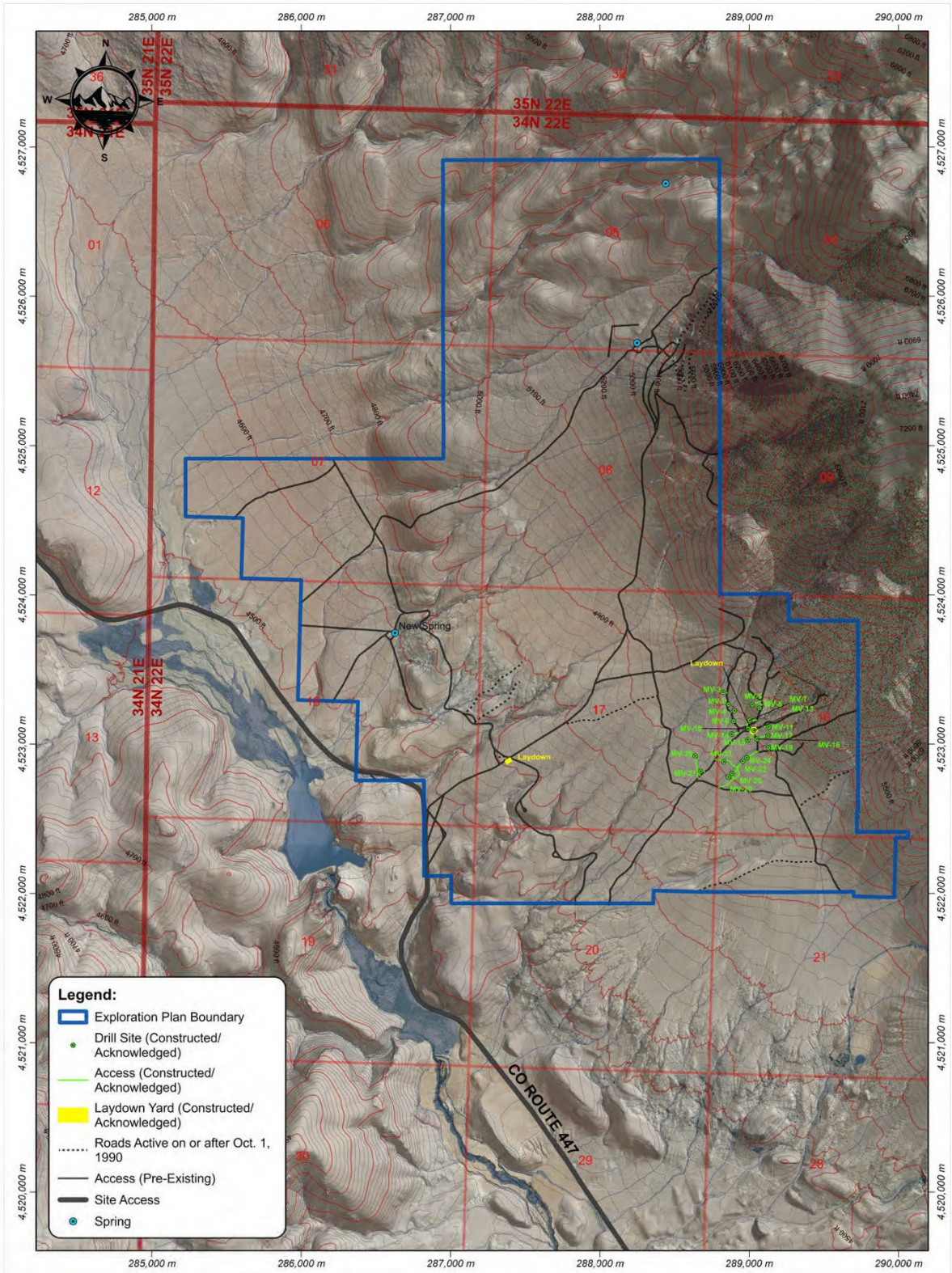
1:30,000

DATE: 5/19/2025

Millennial NV, LLC

Figure 2:
Mountain View Project
Access and Land Status

*Figure 2 - Access and Land Status_BszP



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COORDINATE SYSTEM:

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PCS: NAD 1983 UTM Zone 11N
GCS: GCS North American 1983
Datum: North American 1983
Projection: Transverse Mercator
Map Units: Meter

SUNSTONE ENVIRONMENTAL SOLUTIONS

MILLENNIAL PRECIOUS METALS

DRAWN BY: LanceReinsel

SCALE:

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Feet

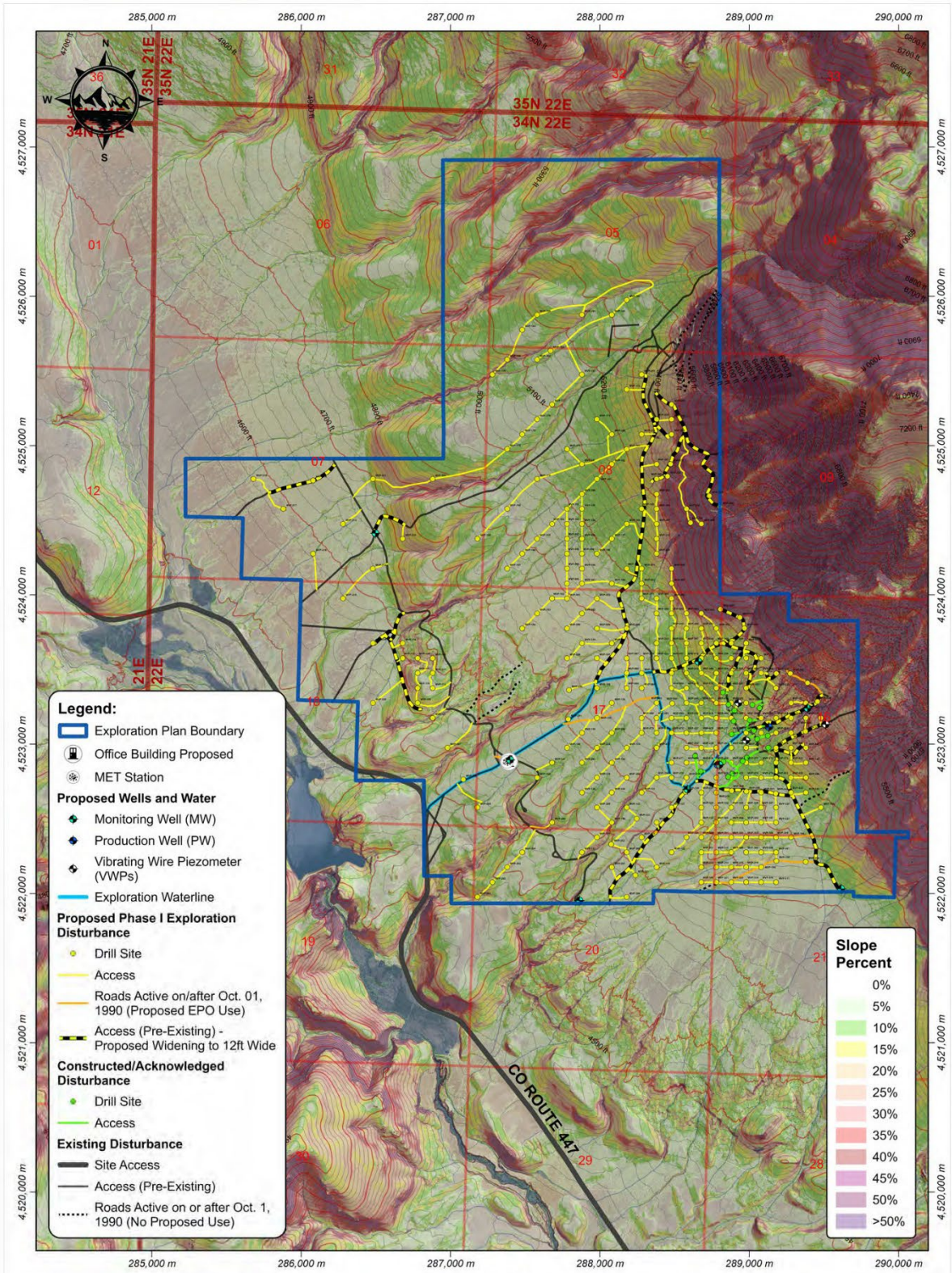
1:24,000

DATE: 5/19/2025

Millennial NV, LLC

Figure 3:
Mountain View Project
Constructed and Acknowledged Disturbance

*Figure 3 - Constructed and Aknowledged Disturbance_BszP



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COORDINATE SYSTEM:

Name: NAD 1983 UTM Zone 11N
PCS: NAD 1983 UTM Zone 11N
GCS: GCS North American 1983
Datum: North American 1983
Projection: Transverse Mercator
Map Units: Meter

SUNSTONE ENVIRONMENTAL SOLUTIONS

MILLENNIAL PRECIOUS METALS

DRAWN BY: LanceReinsel

SCALE:

0 1,000 2,000
Feet

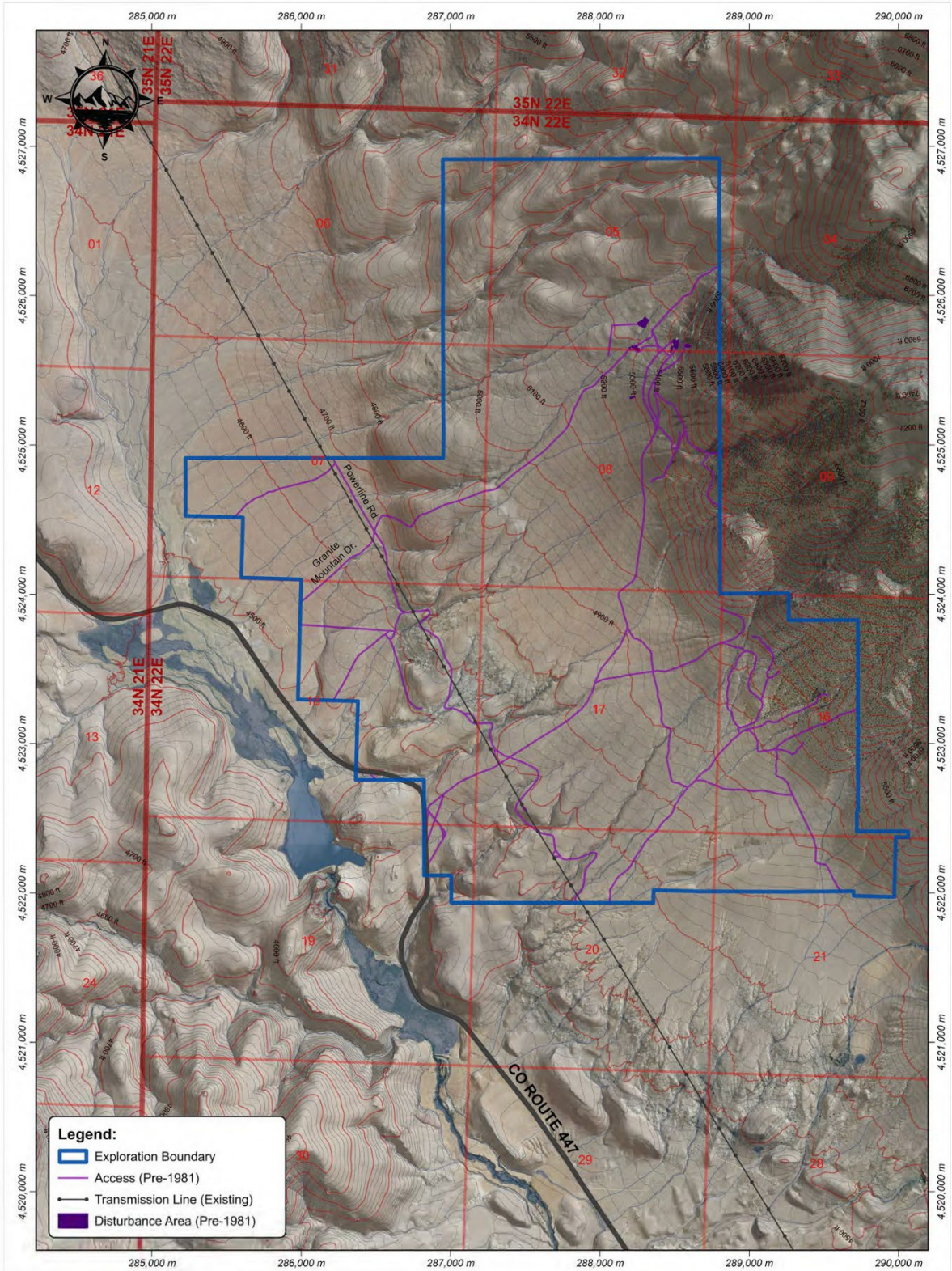
1:24,000

DATE: 5/19/2025

Millennial NV, LLC

Figure 4:
Mountain View Project
Constructed, Acknowledged, and Proposed Disturbance

Figure 4 - Constructed, Acknowledged, and Proposed Disturbance_BszP



NOTES:

*Pre-1981 Disturbance has been digitized using aerial imagery from August 1980 and USGS 7.5 minute topographic maps from 1982.

COORDINATE SYSTEM:

Name: NAD 1983 UTM Zone 11N
PCS: NAD 1983 UTM Zone 11N
GCS: GCS North American 1983
Datum: North American 1983
Projection: Transverse Mercator
Map Units: Meter

SUNSTONE ENVIRONMENTAL SOLUTIONS

MILLENNIAL PRECIOUS METALS

DRAWN BY: LanceReinsel

SCALE: 0 1,000 2,000 Feet
1:24,000

DATE: 5/19/2025

Millennial NV, LLC

Figure 5:
Mountain View Project
Pre-1981 Disturbance

*Figure 5 - Pre-1981 Disturbance_BszP

Appendices

Appendix A:

Reclamation Cost Estimate

Appendix B:

Claim Information

Appendix B
Mining Claim Information
Mountain View Exploration Plan of Operations
All claims are located in Washoe County, Nevada

Claim Name	BLM Legacy Serial Number	BLM New Serial Number	Claim Type	Claimant
CALAMITY JANE 1	None	NV105248126	LODE CLAIM	MILLENNIAL SILVER NEVADA
CALAMITY JANE 10	None	NV105248135	LODE CLAIM	MILLENNIAL SILVER NEVADA
CALAMITY JANE 11	None	NV105248136	LODE CLAIM	MILLENNIAL SILVER NEVADA
CALAMITY JANE 12	None	NV105248137	LODE CLAIM	MILLENNIAL SILVER NEVADA
CALAMITY JANE 13	None	NV105248138	LODE CLAIM	MILLENNIAL SILVER NEVADA
CALAMITY JANE 14	None	NV105248139	LODE CLAIM	MILLENNIAL SILVER NEVADA
CALAMITY JANE 15	None	NV105248140	LODE CLAIM	MILLENNIAL SILVER NEVADA
CALAMITY JANE 16	None	NV105248141	LODE CLAIM	MILLENNIAL SILVER NEVADA
CALAMITY JANE 17	None	NV105248142	LODE CLAIM	MILLENNIAL SILVER NEVADA
CALAMITY JANE 18	None	NV105248143	LODE CLAIM	MILLENNIAL SILVER NEVADA
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MV 99	None	NV105268869	LODE CLAIM	MILLENNIAL SILVER NEVADA, INC.
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RICH #14	NMC814671	NV101827076	LODE CLAIM	MILLENNIAL NV LLC & WITTKOPP LESLIE A

Claim Name	BLM Legacy Serial Number	BLM New Serial Number	Claim Type	Claimant
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RICH #18	NMC814675	NV101827079	LODE CLAIM	MILLENNIAL NV LLC & WITTKOPP LESLIE A
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RICH #24	NMC814679	NV101827084	LODE CLAIM	MILLENNIAL NV LLC & WITTKOPP LESLIE A
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RICH #50	NMC814685	NV101827086	LODE CLAIM	MILLENNIAL NV LLC & WITTKOPP LESLIE A
RICH #51	NMC814686	NV101827087	LODE CLAIM	MILLENNIAL NV LLC & WITTKOPP LESLIE A
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RICH 102	NMC822290	NV101828587	LODE CLAIM	MILLENNIAL NV LLC
RICH 103	NMC822291	NV101828588	LODE CLAIM	MILLENNIAL NV LLC
RICH 104	NMC822292	NV101828589	LODE CLAIM	MILLENNIAL NV LLC
RICH 105	NMC822293	NV101828590	LODE CLAIM	MILLENNIAL NV LLC
RICH 106	NMC822294	NV101828591	LODE CLAIM	MILLENNIAL NV LLC
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RICH 70	NMC822258	NV101826022	LODE CLAIM	MILLENNIAL NV LLC
RICH 72	NMC822260	NV101826023	LODE CLAIM	MILLENNIAL NV LLC
RICH 74	NMC822262	NV101827282	LODE CLAIM	MILLENNIAL NV LLC
RICH 76	NMC822264	NV101827285	LODE CLAIM	MILLENNIAL NV LLC
RICH 78	NMC822266	NV101827286	LODE CLAIM	MILLENNIAL NV LLC
RICH 80	NMC822268	NV101827287	LODE CLAIM	MILLENNIAL NV LLC
RICH 81	NMC822269	NV101827288	LODE CLAIM	MILLENNIAL NV LLC
RICH 82	NMC822270	NV101827289	LODE CLAIM	MILLENNIAL NV LLC
RICH 83	NMC822271	NV101827290	LODE CLAIM	MILLENNIAL NV LLC
RICH 84	NMC822272	NV101827291	LODE CLAIM	MILLENNIAL NV LLC
RICH 85	NMC822273	NV101827292	LODE CLAIM	MILLENNIAL NV LLC
RICH 86	NMC822274	NV101827293	LODE CLAIM	MILLENNIAL NV LLC
RICH 87	NMC822275	NV101827294	LODE CLAIM	MILLENNIAL NV LLC
RICH 88	NMC822276	NV101827295	LODE CLAIM	MILLENNIAL NV LLC
RICH 89	NMC822277	NV101827296	LODE CLAIM	MILLENNIAL NV LLC
RICH 90	NMC822278	NV101827297	LODE CLAIM	MILLENNIAL NV LLC
RICH 91	NMC822279	NV101827298	LODE CLAIM	MILLENNIAL NV LLC
RICH 92	NMC822280	NV101827299	LODE CLAIM	MILLENNIAL NV LLC
RICH 93	NMC822281	NV101827300	LODE CLAIM	MILLENNIAL NV LLC
RICH 94	NMC822282	NV101827301	LODE CLAIM	MILLENNIAL NV LLC
RICH 95	NMC822283	NV101827302	LODE CLAIM	MILLENNIAL NV LLC
RICH 96	NMC822284	NV101828581	LODE CLAIM	MILLENNIAL NV LLC
RICH 97	NMC822285	NV101828582	LODE CLAIM	MILLENNIAL NV LLC
RICH 98	NMC822286	NV101828583	LODE CLAIM	MILLENNIAL NV LLC
RICH 99	NMC822287	NV101828584	LODE CLAIM	MILLENNIAL NV LLC

Appendix C:

Spill Response and Contingency Plan

Millennial NV, LLC
Mountain View Exploration Project
Washoe County, Nevada

MILLENNIAL
PRECIOUS METALS

Spill Response and Contingency Plan

May 2025

Millennial NV, LLC
Mountain View Exploration Project
Washoe County, Nevada

Spill Response and Contingency Plan

Submitted to:

US Department of the Interior
Bureau of Land Management
Winnemucca District
Black Rock Field Office
5100 East Winnemucca Blvd
Winnemucca Nevada, 89445
(775) 623-1500

and

Nevada Division of Conservation and Natural Resources
Division of Environmental Protection
Bureau of Mining Regulation and Reclamation
901 South Stewart Street, Suite 4001
Carson City, NV 89701
(775) 687-9400

Submitted by:

MILLENNIAL
PRECIOUS METALS

Millennial NV, LLC
1490 Stardust St. PO Box 6510
Reno, Nevada 89503

Prepared by:

SUNSTONE
ENVIRONMENTAL SOLUTIONS

Sunstone Environmental Solutions
3360 Cartwright Road
Reno, Nevada 89521

May 2025

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1. Introduction

Millennial Nevada, LLC (Millennial) submits this Spill Response and Contingency Plan (Plan) for the Mountain View Exploration Project (Project). The Project is located approximately 20 miles northwest of Gerlach, Nevada at the base of the Granite Range in Washoe County, Nevada.

Project activities consist of drill pad and road construction, access road construction and maintenance, and laydown yards. There will be drilling activities for geochemical and geotechnical data collection as well as monitoring well installation, and production well installation. Additional data collection activities will be defined by the geology or mineralization found.

1.1. Operator Information

Operator Name:	Millennial NV, LLC
Corporate Contact:	Jason Kosec
Mailing Address:	350 Bay Street, Suite 400 Toronto, ON Canada M5H 2S6

1.2. Designated Facility Representatives

Environmental Manager:	Dale Kerner
Business Name:	Millennial NV, LLC
Mailing Address:	PO Box 52 Jordan Valley, OR 97910-0052
Telephone Number:	208-870-7993
Email Address:	dale@integraresources.com

VP Exploration:	Raphael Dutaut
Business Name:	Millennial NV, LLC
Mailing Address:	350 Bay Street, Suite 400 Toronto, ON Canada M5H 2S6
Telephone Number:	438-459-9344
Email Address:	raphael.dutaut@millennialpm.com

Permitting Agent:	Joseph Martini
Business Name:	Sunstone Environmental Solutions, LLC
Mailing Address:	3360 Cartwright Road Reno, NV 89521
Telephone Number:	775-420-1456
Email Address:	jmartini@sunstonenv.com

1.3. Project Information

1.3.1. Project Location

The proposed Project Area encompasses all or parts of Sections 5, 6, 7, 8, 9, 16, 17, 18, 19, 20, and 21 Township 34 North (T34N), Range 22 East (R22E); Mount Diablo Baseline and Meridian.

The Project is situated in rugged terrain in the high desert of the Basin and Range Physiographic Province. The Basin and Range Province consists of broad flat basins separated by short but steep mountain ranges. It is located at the base of the Granite Range and elevations range from 4,500 feet above mean sea level (amsl) to 5,800 feet amsl.

1.3.2. Project Access

Primary access to the Project is from Gerlach, Nevada. Take NV-447 north from Gerlach for approximately 16 miles. Turn right (east) onto the access road and continue for approximately two miles on dirt roads to reach the Project Area.

2. Spill Response and Contingency Plan

The purpose of this Plan is to establish responsibilities and guidelines for actions to be taken in the event of a spill at the Project. These guidelines are intended to assist personnel in making accurate and timely decisions to facilitate successful resolution of any spill-related incidents that may arise.

Specifically, the objectives of the Plan are to:

- Identify potential pollutant sources that may exist within the Project Area,
- Identify Best Management Practices (BMPs) to prevent or reduce the quantity of potential pollutants discharged to the environment to minimize environmental impacts,
- Establish methods and protocols for responding to environmental releases, and
- Assign responsibilities for notification of state and federal agencies in case of a release.

2.1. Plan Accessibility and Training

All employees and contractors will be provided with a copy of this Plan. They will be responsible for familiarizing themselves with the included information. A copy of this Plan will be kept at the Project along with the Safety Data Sheets (SDSs) included in **Attachment A** for relevant products. This Plan will be reviewed and updated on a regular basis to ensure it remains applicable to the hazards associated with this Project.

2.2. Spill Prevention and Countermeasures

2.2.1. Good Housekeeping

Good housekeeping practices will be followed on site during all Project activities. All materials stored on site will be stored in secondary containment and will be maintained in a neat, orderly

manner. Products will be stored in their original containers with the manufacturer's label clearly marked and legible. All Project personnel will follow the manufacturers' recommendations for proper storage, use, and disposal for products on site.

2.2.2. Preventative Maintenance

Contractors will follow a preventative maintenance schedule to ensure all equipment is operating properly and that there are no leaks or damage that could cause a potential release. Any issues that could cause a potential release will be repaired or replaced immediately upon identification. It is the contractor's responsibility to complete any required maintenance and to promptly submit any spill reports to the Environmental Manager.

2.2.3. Best Management Practices

Water used for dust control at the Project will be sprayed in a manner that doesn't produce runoff.

Contractors are responsible for minimizing impacts from their laydown areas. Containers and/or plastic will be utilized during any preventive maintenance. Trash bins and dumpsters will be water-tight to minimize leaching to the ground surface.

All Project personnel will remain at the fill point for any petroleum product transfer until fill procedures are completed and the transfer line is placed back into the proper storage location.

2.2.4. Inspections

The Environmental Manager will perform daily inspections of the material storage areas to ensure all BMPs are being followed. They will also check the spill kits to make sure they are in the correct locations and fully stocked. Corrective action will promptly ensue if anything is not according to this Plan.

2.3. Source Identification

2.3.1. Potential Pollutants

There are a variety of potential pollutants from an exploration Project from sources including drill rigs, service vehicles, other equipment, trash bins, etc. Pollutants include diesel fuel, gasoline, oil, lubricating grease, other vehicle fluids, solvents, trash, and other debris. There will be approximately 3,000 gallons of diesel fuel, 200 gallons of lubricating grease, and 200 gallons of lubricating oil stored on site. Approximately 500 gallons of gasoline will be stored in fuel delivery systems for all light duty vehicles and tanks. Water or non-toxic drilling fluids including abantonite, Alcomer 120L, bentonite, EZ-mud, polyplus, and super plug will be utilized as necessary. These products will be stored on site in the laydown yard and at each drill rig, however, they are not expected to contaminate soils or surface waters. BMPs as described in Section 2.2 will be implemented throughout the Project to prevent potential releases of these contaminants.

2.4. Spill Contingency Plan

Clean-up will be conducted as soon as possible in the event of a spill. A spill kit will be kept in the laydown area and one spill kit will be kept at each drill site at the Project. Spill clean-up materials and equipment will also be available at any other area of the Project where a potential release could occur. Equipment and materials will include rags, gloves, goggles, absorbent materials such as rolls, pads, booms and pillows, and plastic and/or metal trash containers specifically intended for spills. Personal protective equipment will also be provided. Heavy equipment such as dozers or excavators may be utilized as necessary to dig out contaminated soil or to provide containment berms.

2.4.1. Authority and Responsibilities

In the event of a spill, the observer is responsible for initiating measures to stop and contain the release. The observer will immediately notify their supervisor and the responsible personnel in **Table 1** to report details of the release.

2.4.1.1. Geologist

The onsite Geologist has the primary responsibility and authority to handle spills. The Geologist is responsible for ensuring that the Environmental Manager is immediately notified. The Geologist will then assemble a response team to assist with stopping and containing the release if it hasn't been already. The Geologist will determine the source and cause of the release and ensure that appropriate clean-up measures are undertaken. They will verify that the release is mitigated in a safe manner and all appropriate PPE is being used. The Geologist will ensure that the Environmental Manager receives all pertinent information regarding the spill.

2.4.1.2. Environmental Manager

The Environmental Manager is responsible for notifying appropriate local, state, and federal agencies as described in Section 2.6. They will ensure that all required follow-up reports are accurately prepared and submitted to the appropriate agencies within required deadlines.

Table 1: Responsible Personnel

Position	Name	Contact Number
Geologist	TBD	TBD
Environmental Manager	Benjamin Peterson	(775) 433-4099

The contacts identified in **Table 1** are authorized to complete the spill notifications and duties. It is the Geologist's responsibility to ensure all contractors are familiar with the emergency notification and response procedures. Contacts will be updated as necessary.

2.5. Release Response, Handling, and Cleanup

The Geologist will be responsible for initiating the Spill Release Response Procedure once a release is reported. Once identification and containment of the release is completed, cleanup efforts will begin. All necessary PPE will be used when following spill response procedures. All precautions will be taken to avoid personnel exposure, explosion, fire, or other potential dangers. A variety of fuels, oils, and chemicals will be used on site and these items will be handled according to standard industry practices. Response guidelines for the potential pollutants follow.

2.5.1. Petroleum Product Spill Response

If a petroleum product is spilled or released out of containment, absorbent material will be utilized to soak up the spill. A dirt berm may be constructed as a temporary containment measure to prevent further spread. Contaminated soil and absorbent materials utilized to contain spills will be gathered in designated drums or dumpsters and disposed of offsite in accordance with all applicable federal, state, and local regulations.

2.5.2. Antifreeze Spill Response

If antifreeze is spilled or released from containment, the spill will be contained with appropriate absorbent material. A dirt berm may also be constructed as a temporary containment measure. Contaminated soil will be removed and placed in a metal drum. Absorbent materials will be placed in a separate metal drum. All drums will be properly labeled. The contaminated material will be tested to determine if it qualifies as hazardous for waste characterization. Disposal methods will be dictated by test results and waste characterization.

2.5.3. Solvent Spill Response

If solvent is spilled or released out of containment, the spill will be contained with appropriate absorbent material. A dirt berm may also be constructed as a temporary containment measure. Contaminated soil will be removed and placed in a metal drum. Absorbent materials will be placed in a separate metal drum. All drums will be properly labeled. The contaminated material will be tested to determine if it qualifies as hazardous for waste characterization. Disposal methods will be dictated by test results and waste characterization.

2.6. Notification Requirements

Reporting to state and/or federal agencies may be required depending on the type and quantity of material spilled. Once the size and source of the release and the types and quantities of constituents have been identified, the Environmental Manager will be responsible for notifying appropriate agencies. Agency specific notification requirements and procedures are described as follows. Emergency response contacts are listed in **Table 2**.

Table 2: Emergency Response Contacts

Agency	Telephone Number
Bureau of Land Management, Wildland Fire Report	(775) 623-3444
Bureau of Land Management, Black Rock Field Office	(775) 623-1500
Careflight of Reno	(775) 856-9111
Local Emergency Planning Committee	(775) 999-3901
Gerlach Police Department	(775) 557-2284
Gerlach Volunteer Fire Department	(775) 557-2569
MEDX Air one Air Ambulance	(844) 771-4955
National Response Center	(800) 424-8802
Nevada Division of Emergency Management	(775) 687-0400
NDEP Bureau of Mining Regulation and Reclamation (BMRR)	(775) 687-9404
NDEP Spill Reporting Hotline	(888) 331-6337
Nevada Highway Patrol	*NHP (cell) or 911
Nevada State Emergency Response Commission	(775) 684-7511
Northern Nevada Medical Center	(775) 331-7000
Washoe County Sheriff	(775) 328-3001 or 911

2.6.1. Nevada Division of Environmental Protection and Bureau of Land Management

The Nevada Division of Environmental Protection (NDEP) and Bureau of Land Management (BLM) must be notified via the Spill Reporting Hotline ((888) 331-6337) of any release that contaminates surface water. Releases of a reportable quantity of a hazardous substance as well as releases exceeding the de minimis quantities must also be reported to the BLM and NDEP Spill Reporting Hotline.

2.6.1.3. Petroleum Product Spills

Petroleum products will be the primary potential contaminant on site during exploration activities. Releases of petroleum products equal to or exceeding 100 gallons must be reported to the BLM and NDEP. All releases must be reported to the NDEP within one working day that: 1) impact surface water, 2) are greater than 25 gallons, or, 3) impact at least three cubic yards of soil.

An initial verbal release notification must be made to the NDEP no later than 5:00 PM of the next working day following the discovery of the release. A spill reporting form is provided in **Attachment B**.

2.6.2. National Response Center and Nevada Division of Emergency Management

In accordance with Section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and

Reauthorization Act of 1986 (CERCLA), release of a reportable quantity of a hazardous substance to the environment, according to 40 CFR Part 302, requires reporting to the National Response Center (NRC).

Nevada regulation requires reporting of all petroleum product releases greater than 100 gallons to the Nevada Division of Emergency Management (NDEM), unless otherwise modified in an approved Emergency Response Plan.

The Environmental Manager will be responsible for determining if a reportable quantity of a hazardous material has been released. If a reportable quantity has been released, the NRC and NDEM will be notified immediately. The BLM and NDEP will also be notified immediately or the next working day if the release occurs after 5:00 PM. The following information will be provided:

1. Name, address, and telephone number of the facility owner/operator;
2. Name, address, and telephone number of the facility;
3. Location, quantity, and type of release;
4. Response action(s) taken;
5. Nature and extent of any damage or injuries;
6. Name and telephone number of other agencies contacted.

2.6.3. State Emergency Response Commission and Local Emergency Planning Committee

In accordance with the Community Right to Know Act of 1986 (40 CFR) Part 355), releases of reportable quantities of hazardous substances must be reported to the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC).

The Environmental Manager will be responsible for determining if a reportable quantity of a hazardous material has been released. If a reportable quantity has been released, the SERC and LEPC will be notified immediately via phone or the online spill report form. The following information will be provided:

1. Name, address, and telephone number of the facility owner/operator;
2. Name, address, and telephone number of the facility;
3. Incident date, time and whether the release is ongoing;
4. Spill location information including the following if possible:
    a. Facility ID
    b. APN
    c. Township, Range, Section, Quarter, Mile marker
    d. Easting and Northing
5. Spill Details
    a. Type of material discovered
    b. Concentration
    c. Quantity
    d. Container

e. Media affected
f. Cause of spill
g. Remedial action(s) taken

6. Photos of the spill (if reporting online)

A written follow up notification will be completed as soon as practicable following the spill once more information is available. This notification will include an update on the status of the spill and the corrective actions taken/planned.

2.7. Emergency Equipment

The following emergency equipment and supplies will be available for response to environmental spills or emergencies:

- Earthmoving equipment;
- First-aid and medical treatment supplies;
- Fire extinguishers;
- Shovels;
- Absorbent materials/spill kits;
- Personal Protective Equipment including gloves, goggles, respirators, etc.;
- Portable electric pumps and generators.

Emergency equipment will be inspected and maintained on a regular basis. SDSs for all the chemicals used on site are available and will be provided by Millennial.

Attachment A:
Safety Data Sheets

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo 400 SDE SAE 15W-40

Product Use: Heavy Duty Motor Oil
Product Number(s): 219960, 222290, 278085
Synonyms: Delo 400 SDE SAE 15W-40 ISOCLEAN Certified
Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency & Information Center: Located in the USA. International collect calls accepted.
(800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION:
Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight
Paraffin oils (petroleum), catalytic dewaxed light	64742-71-8	0 - 10 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures
Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing

and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs. If exposure to hydrogen sulfide (H2S) gas is possible during an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

Most important symptoms and effects, both acute and delayed
IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing. Hydrogen sulfide has a strong rotten-egg odor. However, with continued exposure and at high levels, H2S may deaden a person's sense of smell. If the rotten egg odor is no longer noticeable, it may not necessarily mean that exposure has stopped. At low levels, hydrogen sulfide causes irritation of the eyes, nose, and throat. Moderate levels can cause headache, dizziness, nausea, and vomiting, as well as coughing and difficulty breathing. Higher levels can cause shock, convulsions, coma, and death. After a serious exposure, symptoms usually begin immediately.

The U.S. National Institute for Occupational Safety and Health (NIOSH) considers air concentrations of hydrogen sulfide gas greater than 100 ppm to be Immediately Dangerous to Life and Health (IDLH).

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed
Note to Physicians: Administration of 100% oxygen and supportive care is the preferred treatment for poisoning by hydrogen sulfide gas. For additional information on H2S, see Chevron SDS No. 301.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Boron, Nitrogen, Phosphorus, Sulfur, Zinc.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible,

observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: Do not breathe gas. Wash thoroughly after handling. Keep out of the reach of children.
Unusual Handling Hazards: Toxic quantities of hydrogen sulfide (H2S) may be present in storage tanks and bulk transport vessels which contain or have contained this material. Persons opening or entering these compartments should first determine if H2S is present. See Exposure Controls/Personal Protection -Section 8. Do not attempt rescue of a person over exposed to H2S without wearing approved supplied-air or self-contained breathing equipment. If there is a potential for exceeding one-half the occupational exposure standard, monitoring of hydrogen sulfide levels is required. Since the sense of smell cannot be relied upon to detect the presence of H2S, the concentration should be measured by the use of fixed or portable devices.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.

If material is heated and emits hydrogen sulfide, determine if airborne concentrations are below the occupational exposure limit for hydrogen sulfide. If not, wear an approved positive pressure air-supplying respirator. For more information on hydrogen sulfide, see Chevron SDS No. 301. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	Form	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	--	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	--	5 mg/m3	--	--	--
Paraffin oils (petroleum), catalytic dewaxed light	ACGIH	Inhalable fraction	5 mg/m3	--	--	--
Paraffin oils (petroleum), catalytic dewaxed light	OSHA Z-1	Mist	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Brown to yellow
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: No data available
Vapor Density (Air = 1): No data available
Initial Boiling Point: No data available
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: No data available
Melting Point: No data available
Density: 0.8737 kg/l - 0.879 kg/l @ 15°C (59°F) (Typical)
Viscosity: 110 mm2/s - 112 mm2/s @ 40°C (104°F) (Typical)
Coefficient of Therm. Expansion / °F: No data available
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:
Flammability (solid, gas): Not Applicable

Flashpoint: (Cleveland Open Cup) 204 °C (399 °F) (Minimum)
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: Not applicable
Hazardous Decomposition Products: Alkyl Mercaptans (Elevated temperatures), Hydrogen Sulfide (Elevated temperatures)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The material is not considered an eye irritant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Skin Corrosion/Irritation: The material is not considered a skin irritant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Skin Sensitization: The material is not considered a skin sensitizer. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The material is not considered a dermal toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The material is not considered an oral toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The material is not considered an inhalation toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.
Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The material is not considered a mutagen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Carcinogenicity: The material is not considered a carcinogen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Reproductive Toxicity: The material is not considered a reproductive toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Specific Target Organ Toxicity - Single Exposure: The material is not considered a target organ toxicant (single exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Specific Target Organ Toxicity - Repeated Exposure: The material is not considered a target organ toxicant (repeated exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Aspiration Hazard: The material is not considered an aspiration hazard.

ADDITIONAL TOXICOLOGY INFORMATION:
During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the

International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is not expected to be harmful to aquatic organisms.
The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY
No data available.

PERSISTENCE AND DEGRADABILITY
This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.
The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: Not applicable

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	05=MA RTK
01-2A=IARC Group 2A	06=NJ RTK
01-2B=IARC Group 2B	07=PA RTK
02=NTP Carcinogen	08-1=TSCA 5(e)
03=EPCRA 313	08-2=TSCA 12(b)
04=CA Proposition 65	

The following components of this material are found on the regulatory lists indicated.
Paraffin oils (petroleum), catalytic dewaxed light 05, 06, 07

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: DSL (Canada), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea).

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Motor oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 2 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: SECTION 02 - Environmental Classification information was deleted.
SECTION 02 - Hazard Statements information was deleted.
SECTION 02 - Hazards Otherwise Not Classified information was modified.
SECTION 02 - Health Classification information was deleted.
SECTION 02 - Pictogram information was deleted.
SECTION 02 - Precautionary Statements information was deleted.
SECTION 02 - Signal Word information was deleted.
SECTION 03 - Composition information was modified.
SECTION 04 - First Aid - Eye information was modified.
SECTION 04 - Immediate Health Effects - Eye information was modified.
SECTION 07 - Precautionary Measures information was modified.
SECTION 08 - Eye/Face Protection information was modified.
SECTION 11 - Toxicological Information information was modified.
SECTION 12 - Ecological Information information was modified.
SECTION 15 - Regulatory Information information was modified.
SECTION 15 - SARA 311 EPCRA Score information was added.
SECTION 15 - SARA 311 EPCRA Score information was deleted.
SECTION 16 - HMIS Rating information was modified.

Revision Date: May 12, 2022

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Technical Center, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

SAFETY DATA SHEET

1. Identification

Product identifier **ALCOMER 120L**

Other means of identification None.

Recommended use Drilling Fluid Additive

Recommended restrictions None known.

Details of the supplier of the safety data sheet

Company name: SECURE ENERGY

Address: 2300, 225 6th Ave SW
Calgary, Alberta T2P 1N2

Prepared by: Regulatory Affairs

Customer Support: 1-403-264-1588

Emergency Number: 1-877-518-4321

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2B

Label elements

Signal word Warning

Hazard statement Causes skin irritation. Causes eye irritation.

Precautionary statement

Prevention Wash thoroughly after handling. Wear protective gloves.

Response IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Other hazards None known.

Supplemental information Material can be slippery when wet.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Distillates (petroleum), hydrotreated heavy naphthenic		64742-52-5	40 - < 50
Petroleum distillates, hydrotreated light		64742-47-8	10 - 30
Alcohols, C12-15-ethoxylated Propoxylated		68551-13-3	1 - < 5

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Powder. Dry chemicals. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Very slippery when wet.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Cool containers exposed to heat with water spray and remove container, if no risk is involved.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. In case of spills, beware of slippery floors and surfaces. Material can be slippery when wet. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Use water spray to reduce vapours or divert vapour cloud drift. This product is miscible in water. Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Material can be slippery when wet.

Conditions for safe storage, including any incompatibilities Keep away from heat and sources of ignition. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

Components referred to herein may be regulated by specific Canadian provincial legislation. Please refer to exposure limits legislated for the province in which the substance will be used.

ACGIH

Components	Type	Value	Form
Petroleum distillates, hydrotreated light (CAS 64742-47-8)	TWA	5 mg/m3	Inhalable fraction

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Use of impervious boots is recommended.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Chemical respirator with organic vapour cartridge. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Colour Off-white.

Odour Mineral oil-like

Odour threshold Not available.

pH 3.9 - 4.4 (1% Solution)

Melting point/freezing point Not available.

Initial boiling point and boiling range > 100 °C (> 212 °F)

Flash point > 93.0 °C (> 199.4 °F)

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Dispersible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	1.10 g/cm3 (approximate)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	Causes skin irritation.
Eye contact	Causes eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	Not classified.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

ACGIH Carcinogens

Not listed.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test results
Petroleum distillates, hydrotreated light (CAS 64742-47-8)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	2.7 - 5.1 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.9 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

Canadian regulations

This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product are listed on the inventory administered by the governing country(s) or are exempt.
A "No" indicates that one or more components of the product are not listed on the inventory administered by the governing country(s).

16. Other information

Issue date 23-January-2019

Revision date 23-January-2019

Version No. 1.0

Disclaimer

The information contained herein is based on data available to us, and is believed to be true and accurate. However, no guarantee or warranty is provided, expressed or implied, by the company or its subsidiaries regarding accuracy of the information, the hazards connected with the use of the material, or the results to be obtained from the use thereof. Since the use of this product is within the exclusive control of the user, we do not assume any responsibility and expressly disclaim any liability for any use of this product. It is the user's responsibility to determine the conditions of safe use, storage, and disposal of the product. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.

BENTONITE
Performance Minerals LLC

SAFETY DATA SHEET

Product Trade Name: **BARA-KADE® BENTONITE**

Revision Date: 02-Apr-2015 **Revision Number:** 10

1. Identification

1.1. Product Identifier

Product Trade Name:	BARA-KADE® BENTONITE
Synonyms:	None
Chemical Family:	Mineral
Internal ID Code	HM005230

1.2 Recommended use and restrictions on use

Application:	Additive
Uses Advised Against	No information available

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier	BENTONITE Performance Minerals LLC 3000 N Sam Houston Parkway East Houston, TX 77032 Telephone: (281) 871-7900 Fax: (281) 871-7940 Emergency Telephone: (281) 575-5000
Prepared By	Chemical Stewardship Telephone: 1-580-251-4335 e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number

Emergency Telephone Number	(281) 575-5000

2. Hazard(s) Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

Carcinogenicity	Category 1A - H350
Specific Target Organ Toxicity - (Repeated Exposure)	Category 1 - H372

2.2. Label Elements

Hazard Pictograms

Signal Word Danger

Hazard Statements
H350 - May cause cancer by inhalation
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

Precautionary Statements

Prevention
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/eye protection/face protection

Response
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical attention/advice if you feel unwell

Storage
P405 - Store locked up

Disposal
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains

Substances	CAS Number
Bentonite	1302-78-9
Crystalline silica, quartz	14808-60-7
Crystalline silica, cristobalite	14464-46-1
Crystalline silica, tridymite	15468-32-3

2.3 Hazards not otherwise classified
None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Bentonite	1302-78-9	60 - 100%	Not classified
Crystalline silica, quartz	14808-60-7	1 - 5%	Carc. 1A (H350) STOT RE 1 (H372)
Crystalline silica, cristobalite	14464-46-1	0.1 - 1%	Carc. 1A (H350) STOT RE 1 (H372)
Crystalline silica, tridymite	15468-32-3	0.1 - 1%	Carc. 1A (H350) STOT RE 1 (H372)

The exact percentage (concentration) of the composition has been withheld as proprietary.

4. First-Aid Measures

4.1. Description of first aid measures
Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Skin	Wash with soap and water. Get medical attention if irritation persists.
Ingestion	Under normal conditions, first aid procedures are not required.

4.2 Most important symptoms/effects, acute and delayed

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

All standard fire fighting media

Extinguishing media which must not be used for safety reasons

None known.

5.2 Specific hazards arising from the substance or mixture

Special Exposure Hazards

Decomposition in fire may produce toxic gases.

5.3 Special protective equipment and precautions for fire-fighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid creating and breathing dust.
See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

7. Handling and storage

7.1. Precautions for Safe Handling

Handling Precautions

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Bentonite	1302-78-9	Not applicable	TWA: 1 mg/m^3
Crystalline silica, quartz	14808-60-7	$\frac{10 \text{ mg/m}^3}{\%SiO2 + 2}$	TWA: 0.025 mg/m^3
Crystalline silica, cristobalite	14464-46-1	1/2 x $\frac{10 \text{ mg/m}^3}{\%SiO2 + 2}$	TWA: 0.025 mg/m^3
Crystalline silica, tridymite	15468-32-3	1/2 x $\frac{10 \text{ mg/m}^3}{\%SiO2 + 2}$	0.05 mg/m^3

8.2 Appropriate engineering controls

Engineering Controls Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

8.3 Individual protection measures, such as personal protective equipment

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)

Hand Protection Normal work gloves.

Skin Protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection Wear safety glasses or goggles to protect against exposure.

Other Precautions None known.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Solid
Color: Various
Odor: Odorless
Odor Threshold: No information available

Property Remarks/ - Method	Values
pH:	8-10
Freezing Point/Range	No information available.
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	No data available
Flammability (solid, gas)	No data available
upper flammability limit	No data available
lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	2.65
Water Solubility	Insoluble in water
Solubility in other solvents	No data available

Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%)	No data available

10. Stability and Reactivity

10.1. Reactivity
Not expected to be reactive.

10.2. Chemical Stability
Stable

10.3. Possibility of Hazardous Reactions
Will Not Occur

10.4. Conditions to Avoid
None anticipated

10.5. Incompatible Materials
Hydrofluoric acid.

10.6. Hazardous Decomposition Products
Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

11. Toxicological Information

11.1 Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Acute Toxicity

Inhalation

Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

Eye Contact	May cause mechanical irritation to eye.
Skin Contact	May cause mechanical skin irritation.
Ingestion	None known

Chronic Effects/Carcinogenicity Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Bentonite	1302-78-9	> 5000 mg/kg (Rat) > 2000 mg/kg (Rat)	No data available	> 5.27 mg/L (Rat)
Crystalline silica, quartz	14808-60-7	500 mg/kg (Rat) >15,000 mg/kg (Human)	No data available	No data available
Crystalline silica, cristobalite	14464-46-1	500 mg/kg (Rat)	No data available	No data available
Crystalline silica, tridymite	15468-32-3	500 mg/kg (Rat)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Bentonite	1302-78-9	Non-irritating to the skin (Rabbit)
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin
Crystalline silica, cristobalite	14464-46-1	Non-irritating to the skin
Crystalline silica, tridymite	15468-32-3	Non-irritating to the skin

Substances	CAS Number	Eye damage/irritation
Bentonite	1302-78-9	Non-irritating to the eye (Rabbit)
Crystalline silica, quartz	14808-60-7	Mechanical irritation of the eyes is possible.
Crystalline silica, cristobalite	14464-46-1	Mechanical irritation of the eyes is possible.
Crystalline silica, tridymite	15468-32-3	Mechanical irritation of the eyes is possible.

Substances	CAS Number	Skin Sensitization
Bentonite	1302-78-9	Did not cause sensitization on laboratory animals (mouse)
Crystalline silica, quartz	14808-60-7	Not regarded as a sensitizer.
Crystalline silica, cristobalite	14464-46-1	Not regarded as a sensitizer.
Crystalline silica, tridymite	15468-32-3	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Bentonite	1302-78-9	No information available
Crystalline silica, quartz	14808-60-7	No information available

Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

Substances	CAS Number	Mutagenic Effects
Bentonite	1302-78-9	In vitro tests did not show mutagenic effects
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.
Crystalline silica, cristobalite	14464-46-1	Not regarded as mutagenic.
Crystalline silica, tridymite	15468-32-3	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Bentonite	1302-78-9	Did not show carcinogenic effects in animal experiments (similar substances)
Crystalline silica, quartz	14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.
Crystalline silica, cristobalite	14464-46-1	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.
Crystalline silica, tridymite	15468-32-3	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.

Substances	CAS Number	Reproductive toxicity
Bentonite	1302-78-9	Did not show teratogenic effects in animal experiments.
Crystalline silica, quartz	14808-60-7	No information available
Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

Substances	CAS Number	STOT - single exposure
Bentonite	1302-78-9	None under normal use conditions
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.
Crystalline silica, cristobalite	14464-46-1	No significant toxicity observed in animal studies at concentration requiring classification.
Crystalline silica, tridymite	15468-32-3	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Bentonite	1302-78-9	None under normal use conditions
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)
Crystalline silica, cristobalite	14464-46-1	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)
Crystalline silica, tridymite	15468-32-3	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Substances	CAS Number	Aspiration hazard
Bentonite	1302-78-9	Not applicable
Crystalline silica, quartz	14808-60-7	Not applicable
Crystalline silica, cristobalite	14464-46-1	Not applicable
Crystalline silica, tridymite	15468-32-3	Not applicable

12. Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Bentonite	1302-78-9	EC50(72h): > 100 mg/L (freshwater algae)	TLM96 10,000 ppm (Oncorhynchus mykiss) LC50 (96h) 16,000 - 19,000 mg/L (Oncorhynchus mykiss) LC50 (24h) 2800 – 3200 mg/L (black bass, warmouth bass, blue gill and sunfish)	No information available	EC50 (96h) 81.6 mg/L (Metacarcinus magister) EC50 (96h) 24.8 mg/L (Pandalus danae) EC50 (48h) > 100 mg/L (Daphnia magna)
Crystalline silica, quartz	14808-60-7	No information available	LL50 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)
Crystalline silica, cristobalite	14464-46-1	No information available	LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)
Crystalline silica, tridymite	15468-32-3	No information available	LL0 (96h) 10,000 mg/L(Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Bentonite	1302-78-9	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, quartz	14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, cristobalite	14464-46-1	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, tridymite	15468-32-3	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Bentonite	1302-78-9	No information available
Crystalline silica, quartz	14808-60-7	No information available
Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

12.4. Mobility in soil

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Disposal Method Bury in a licensed landfill according to federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. Transport Information

US DOT

UN Number: Not restricted

UN Proper Shipping Name: Not restricted

Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

US DOT Bulk
DOT (Bulk) Not applicable

Canadian TDG
UN Number: Not restricted
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IMDG/IMO
UN Number: Not restricted
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IATA/ICAO
UN Number: Not restricted
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable
Special Precautions for User: None

15. Regulatory Information

US Regulations

US TSCA Inventory All components listed on inventory or are exempt.

EPA SARA Title III Extremely Hazardous Substances Not applicable

EPA SARA (311,312) Hazard Class Chronic Health Hazard

EPA SARA (313) Chemicals This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund Reportable Spill Quantity Not applicable.

EPA RCRA Hazardous Waste Classification If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

California Proposition 65 The California Proposition 65 regulations apply to this product.

MA Right-to-Know Law One or more components listed.

NJ Right-to-Know Law One or more components listed.

PA Right-to-Know Law One or more components listed.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory or are exempt.

16. Other information

Preparation Information

Prepared By
Chemical Stewardship
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

Revision Date: 02-Apr-2015

Reason for Revision Update to Format SECTION: 2

Additional information
For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
UN – United Nations
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

Safety Data Sheet Portland Cement

Section 1. Identification

GHS product identifier: Portland Cement

Chemical name: Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.

Other means of identification: Cement, ASTM Type I, II, III, V, Portland Limestone Cement, Plastic Cement, Hydraulic Cement, Oilwell Cement, Well Cement, Class G Cement, InterCem, EcoCemPLC, Type IL, CSA Type GU, GUb, GUL, MS, MH, MHL, HE, HEL, LH, LHL, HS

Relevant identified uses of the substance or mixture and uses advised against: Building materials, construction, a basic ingredient in concrete.

Supplier's details: 300 E. John Carpenter Freeway, Suite 1645
Irving, TX 75062
(972) 653-5500

Emergency telephone number (24 hours): **CHEMTREC: (800) 424-9300**

Section 2. Hazards Identification

Overexposure to portland cement can cause serious, potentially irreversible skin or eye damage in the form of chemical (caustic) burns, including third degree burns. The same serious injury can occur if wet or moist skin has prolonged contact exposure to dry portland cement.

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture:
SKIN SENSITIZATION – Category 1; H314
CARCINOGENICITY – Category 1A; H350
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) – Category 2; H335
SKIN CORROSION/IRRITATION – Category 1C; H314
SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1; H318

GHS label elements

Hazard pictograms:

Signal word: Danger

Hazard statements:
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause cancer.

Precautionary statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Use outdoors in a well ventilated area. Wash any exposed body parts thouroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.Contaminated clothing must not be allowed out of the workplace.

Response: If exposed or concerned: Immediately get medical advice/attention if you feel unwell or irritation or rash occurs.If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.If inhaled: Remove person to fresh air and keep comfortable for breathing. If swallowed: Rinse mouth. Do not induce vomiting.

Storage: Restrict or control access to stockpile areas (store locked up). Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains cement without an effective procedure for assuring safety. Store in a well ventilated area. Keep container tightly closed.

Disposal: Dispose of contents/container in accordance with local/regional/national/international

regulations.

Hazards not otherwise classified (HNOC): None known

Supplemental Information: Respirable Crystalline Silica (RCS) may cause cancer. Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC and NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture
Chemical Name: Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.

CAS number/other identifiers

Ingredient name	%	CAS number
Portland Cement	100%	65997-15-1
The structure of Portland cement may contain the following in some concentration ranges:		
Calcium oxide	0-5	1305-78-8
Quartz	0-0.1	14808-60-7
Gypsum	4-9	13397-24-5
Limestone	0-5	1317-65-3
Magnesium oxide	0-4	1309-48-4
Gypsum, limestone and magnesium oxide are not classifiable as a hazard under Title 29 Code of Federal Regulations 1910.1200.		
Hexavalent chromium*	Trace	18450-29-9
***Hexavalent chromium is included due to dermal sensitivity associated with the component.**		

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye Contact: Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician.

Inhalation: Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of portland cement requires immediate medical attention. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in a recovery position and get medical attention immediately. Maintain an open airway.

Skin Contact: Get medical attention immediately. Heavy exposure to portland cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes, and leather goods such as watchbands and belts. Quickly and gently blot or brush away excess portland cement. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH natural soap. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposure to wet cement, cement mixtures or liquids from wet cement. Burns should be treated as caustic burns. Portland cement causes skin burns with little warning. Discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure.

Ingestion: Get medical attention immediately. Call a poison center or physician. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING unless directed to do so by medical personnel. 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. Have victim drink 60 to 240 mL (2 to 8 oz.) of water. Stop giving water if the exposed person feels sick as vomiting may be dangerous. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed potential acute health effects

Eye contact: Causes serious eye damage.
Inhalation: May cause respiratory irritation.
Skin contact: Causes severe burns. May cause an allergic skin reaction.
Ingestion: May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following: pain, watering and redness.
Inhalation: Adverse symptoms may include the following: respiratory tract irritation and coughing.
Skin contact: Adverse symptoms may include the following: pain or irritation, redness and blistering may occur, skin burns, ulceration and necrosis may occur.
Ingestion: Adverse symptoms may include the following: stomach pains.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments: Not applicable.
Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media: Do not use water jet or water-based fire extinguishers.
Specific hazards arising from the chemical: No specific fire or explosion hazard.
Hazardous thermal decomposition Products: Decomposition products may include the following materials: carbon dioxide, carbon monoxide, sulfur oxides and metal oxide/oxides.
Special protective actions for fire-fighters: Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders: For personal protective clothing requirements, please see Section 8.
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 entered the environment, including waterways, soil or air. Materials can enter waterways through drainage systems.

Methods and materials for containment and cleaning up

Small spill: Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of waste material by using a licensed waste disposal contractor.

Large spill: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place dust in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Large spills to waterways may be hazardous due to alkalinity of the product. Dispose of waste material using a licensed waste disposal contractor. Note: see section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure by obtaining and following special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material and keep the container tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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.

Conditions for safe storage, including any incompatibilities: A key to using the product safely requires the user to recognize that portland cement reacts chemically with water to produce calcium hydroxide which can cause severe chemical burns. Every attempt should be made to avoid skin and eye contact with cement. Do not get portland cement inside boots, shoes or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are dusty or wet with cement mixtures. Launder/clean clothing and shoes before reuse. Do not enter a confined space that stores or contains portland cement unless appropriate procedures and protection are available. Portland cement can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

Section 8. Exposure controls/personal protec

Ingredient name	Exposure limits
Particulates not otherwise classified (CAS SEQ250)	**ACGIH TLV (United States, Canada)** TWA: 3 mg/m³. Form: Respirable particles TWA: 10 mg/m³. Form: Inhalable particles **OSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust **MSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 10 mg/m³. Form: Total dust
Portland Cement	**ACGIH TLV (United States and Canada)** TWA: 1 mg/m³. Form: Respirable dust **OSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust **MSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 10 mg/m³. Form: Total dust
Calcium oxide	**ACGIH TLV (United States and Canada)** TWA: 2 mg/m³ 8 hours **OSHA/MSHA PEL (United States)** TWA: 5 mg/m³ 8 hours.
Limestone	**ACGIH TLV (United States, Canada)** TWA: 3 mg/m³. Form: Respirable particles TWA: 10 mg/m³. Form: Inhalable particles **OSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust **MSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 10 mg/m³. Form: Total dust
Magnesium oxide	**ACGIH TLV (United States and Canada)** TWA: 10 mg/m³ 8 hours. Form: Inhalable fraction **OSHA PEL (United States)** TWA: 15 mg/m³ 8 hours. Form: Total particulates
Calcium sulfate (gypsum)	**ACGIH TLV (United States, Canada)** TWA: 10 mg/m³ 8 hours. Form: Respirable fraction **OSHA PEL Z-1 (United States)** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust
Crystalline Silica (Quartz) (CAS 14808-60-7)	**ACGIH TLV (United States)** TWA: 0.025 mg/m³. Form: Respirable fraction **OSHA PEL (United States)** TWA: 0.05 mg/m³. Form: Respirable **MSHA PEL (United States)** TWA: 10/(%SiO2 + 2) in mg/m3 **Provincial Exposure Limits (Canada, various)** ▪ **Alberta (OHS Code)** 0.025 mg/m³ 8 hour TWA ▪ **British Columbia (WorkSafeBC OHS Regulation)** 0.025 mg/m³ 8 hour TWA ▪ **British Columbia (Health, Safety & Reclamation Code, Mines Act)** 0.1 mg/m³ 8 hour TWA ▪ **Manitoba (Workplace Safety and Health Regulation)** 0.025 mg/m³ 8 hour TWA ▪ **New Brunswick** 0.025 mg/m³ 8 hour TWA ▪ **Newfoundland** 0.025 mg/m³ 8 hour TWA ▪ **Nova Scotia** 0.025 mg/m³ 8 hour TWA ▪ **Ontario (O. Reg 490/09; and O. Reg. 833)** 0.1 mg/m³ 8 hour TWA ▪ **Prince Edward Island**

	0.025 mg/m³ 8 hour TWA ▪ **Quebec (Regulation Respecting OHS, Chapter S-2.1, r. 13)** 0.1 mg/m³ 8 hour TWA ▪ **Saskatchewan (OHS Regulations)** 0.05 mg/m³ 8 hour TWA

Appropriate engineering controls: Use only with adequate ventilation. If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Exposure guidelines: OSHA PELs, MSHA PELs, Canadian Provincial OELs, and ACGIH TLVs are 8-hr TWA values. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Terms including "Particulates Not Otherwise Classified," "Particulates Not Otherwise Regulated," Particulates Not Otherwise Specified," and "Inert or Nuisance Due" are often used interchangeably; however, the user should review each agency's terminology for differences in meanings.

Individual protection measures

Hygiene measures: Clean water should always be readily available for skin and (emergency) eye washing. Periodically wash areas contacted by portland cement with a pH neutral soap and clean, uncontaminated water. If clothing becomes saturated with portland cement, garments should be removed and replaced with clean, dry clothing.

Eye/face protection: To prevent eye contact, wear safety glasses with side shields, safety goggles or face shields when handling dust or wet cement. Wearing contact lenses when working with cement is not recommended.

Skin protection

Hand protection: Use impervious, waterproof, abrasion and alkali-resistant gloves. Do not rely on barrier creams in place of impervious gloves. Do not get portland cement inside gloves.

Body protection: Use impervious, waterproof, abrasion and alkali-resistant boots and protective long-sleeved and long-legged clothing to protect the skin from contact with wet portland cement. To reduce foot and ankle exposure, wear impervious boots that are high enough to prevent portland cement from getting inside them. Do not get portland cement inside boots, shoes, or gloves. Remove clothing and protective equipment that becomes saturated with cement and immediately wash exposed areas of the body.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved. .

Respiratory protection: Use properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and assigned protection factor of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical State:	Solid. [Powder]	**Lower and Upper explosive flammable limits**	Not applicable
Color:	Gray or white	**Vapor pressure:**	Not applicable
Odor:	Odorless	**Vapor density:**	Not applicable
Odor threshold:	Not available	**Relative density:**	2.3 to 3.1
pH:	>11.5 [Conc. (% w/w): 1%]	**Solubility:**	Slightly soluble in water
Melting point:	Not available	**Solubility in water:**	0.1 to 1%
Boiling point:	>1000°C (>1832°F)	**Partition coefficient: n-octanol/water:**	Not applicable
Flash point:	Not flammable. Not combustible	**Auto-ignition temperature:**	Not applicable
Burning time:	Not available	**Decomposition temperature:**	Not available
Burning rate:	Not available	**SADT:**	Not available
Evaporation Rate:	Not applicable	**Viscosity:**	Not applicable
Flammability (solid, gas):	Not applicable		

Section 10. Stability and reactivity

Reactivity: Reacts slowly with water forming hydrated compounds, releasing heat and producing a strong alkaline solution until reaction is substantially complete.

Chemical Stability: The product is stable.

Possibility of hazardous reactions: Under normal circumstances of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials, acids, aluminum and ammonium salt. Portland cement is highly alkaline and will react with acids to produce a violent, heat-generating reaction. Toxic gases or vapors may be given off depending on the acid involved. Reacts with acids, aluminum metals and ammonium salts. Aluminum powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas. Limestone ignites on contact with fluorine and is incompatible with acids, alum, ammonium salts, and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silicates dissolve readily in hydrofluoric acid producing a corrosive gas-silicon tetrafluoride.

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

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity: Portland Cement LD50/LC50 = Not available

Irritation/Corrosion: **Skin:** May cause skin irritation. May cause serious burns in the presence of moisture.
Eyes: Causes serious eye damage. May cause burns in the presence of moisture.
Respiratory: May cause respiratory tract irritation.

Sensitization: May cause sensitization due to the potential presence of trace amounts of hexavalent chromium.

Mutagenicity: There are no data available.

Carcinogenicity:
Classification below:

Product/ingredient name	OSHA	IARC	ACGIH	NTP
Cement, portland, chemicals	-	-	A4	-
Crystalline Silica (Quartz) (CAS 14808-60-7)	Listed	1	A2	Known to be a human carcinogen.

Reproductive toxicity: There are no data available.

Teratogenicity: There are no data available.

Specific target organ toxicity (single exposure)

Name	Category	Route of Exposure	Target Organs
Calcium oxide	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation
Cement, portland, chemicals	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) (CAS 14808-60-7)	Category 1	Inhalation	Respiratory tract and kidneys

Aspiration hazard: There are no data available.

Information on the likely routes of exposure

Potential acute health effects:
Eye contact: Causes serious eye damage.
Inhalation: May cause respiratory irritation.
Skin contact: Causes severe burns. May cause an allergic skin reaction.
Ingestion: May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics:
Eye contact: Adverse symptoms may include the following: pain, watering, redness.
Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing
Skin contact: Adverse symptoms may include the following: pain or irritation, redness, blistering may occur, skin burns, ulcerations and necrosis may occur
Ingestion: Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure:
Short term exposure
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Long term exposure
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects:
General: Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. If sensitized to hexavalent chromium, a severe allergic dermal reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: Portland cement is not classifiable as a human carcinogen. Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity. Excessive exposure to crystalline silica can cause silicosis, a non-cancerous lung disease.

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.

Numerical measures of toxicity: Acute toxicity estimates: There are no data available.

Section 12. Ecological Information

Toxicity

Product/ingredient name	Result	Species	Exposure
Calcium oxide	Chronic NOEC 100 mg/L Fresh water	Fish-Oreochromis niloticus-Juvenile (Fledgling, Hatchling, Weanling)	46 days

Persistence and degradability: There are not data available.
Bioaccumulative potential: There are not data available.
Mobility in soil: Soil/water partition coefficient (Koc): Not available.
Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should 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. Untreated waste should not be released to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe manner. Care should be taken when handling empty containers that have not been cleaned or rinsed out. 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. Transportation information

	DOT Classification	IMDG	IATA
UN number	Not regulated	Not regulated	Not regulated
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	None	None	None
Canada TDG	-	-	-
Additional information	-	-	-

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.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory Information

TSCA 6 final risk management: Chromium, ion (Cr6+)
United States inventory (TSCA 8b): Cements are considered to be statutory mixtures under TSCA. CAS 65997-15-1 is included on the TSCA inventory.
CERCLA: This product is not listed as a CERCLA substance
Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs) – Not listed
Clean Air Act Section 602: Class I Substances - Not listed
Clean Air Act Section 602: Class II Substances - Not listed
DEA List I Chemicals: (Precursor Chemicals) – Not listed
DEA List II Chemicals: (Essential Chemicals) – Not listed
Canada NSNR Status – Listed on DSL or exempt

SARA 311/312

Classification: Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Calcium oxide	0-5	No	No	No	Yes	No
Quartz	>0.1	No	No	No	No	Yes
Chromium, ion (Cr6+)	<0.1	No	No	No	Yes	Yes

SARA 313

	Product name	CAS number	%
Form R-Report requirements	Chromium, ion (Cr6+)	8540-29-9	<0.1

State regulations

Massachusetts: The following components are listed: cement, portland, chemicals, limestone

New York:	None of the components are listed.
New Jersey:	The following components are listed: cement, portland, chemicals, gypsum, limestone
Pennsylvania:	The following components are listed: cement, portland, chemicals, gypsum, limestone

California Prop. 65

WARNING: This product contains crystalline silica and chemicals (trace metals) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the above warning in the absence of definitive testing to prove the defined risks do not exist.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Quartz	Yes	No	No	No
Chromium, ion (Cr6+)	Yes	Yes	0.001µg/day (inhalation)	8.2 micrograms/day (ingestion)

International regulations

International lists: **Canadian Domestic Substances List (DSL):** Portland cement is included on the DSL.
Mexico Inventory (INSQ): All components are listed or exempted.

WHMIS Classification: D2A "Materials Causing Other Toxic Effects"

Section 16. Other Information

Date of issue: 01/01/2022
Replaces: 07/01/2018
Revised Section(s): Section 8, 11, 14, 15

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of portland cement as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with portland cement to produce portland cement products. Users should review other relevant material safety data sheets before working with this portland cement or working on portland cement products, for example, portland cement concrete.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Lehigh Hanson, except that the product shall conform to contracted specifications. The information provided herein was believed by the Lehigh Hanson to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists
CAS — Chemical Abstract Service
CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act
CFR — Code of Federal Regulations
DOT — Department of Transportation
GHS — Globally Harmonized System
HEPA — High Efficiency Particulate Air
IATA — International Air Transport Association
IARC — International Agency for Research on Cancer
IMDG — International Maritime Dangerous Goods
NIOSH — National Institute of Occupational Safety and Health
NOEC — No Observed Effect Concentration
NTP — National Toxicology Program
OSHA — Occupational Safety and Health Administration
PEL — Permissible Exposure Limit
REL — Recommended Exposure Limit
RQ — Reportable Quantity
SARA — Superfund Amendments and Reauthorization Act
SDS — Safety Data Sheet
TLV — Threshold Limit Value
TPQ — Threshold Planning Quantity
TSCA — Toxic Substances Control Act
TWA — Time-Weighted Average
UN — United Nations

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

DIESEL FUEL No. 2

Product Use: Fuel [See Section 16 for Additional Product Numbers]
Synonyms: 15 S Diesel Fuel 2; Alternative Low Aromatic Diesel (ALAD); CAL ULS S R6-20 B0-5 DF2; CAL ULS S R6-20 B0-5 DF2DY; Calco LS Diesel 2; CALCO ULS C-B0-B5 DF2; CALCO ULS C-B0-B5 DF2 DYED; CALCO ULS C-B2 DF2; CALCO ULS C-B2 DF2 DYED; CALCO ULS C-B5 DF2; CALCO ULS C-B5 DF2 DYED; Calco ULS DF2; Calco ULS Diesel 2; CALCO ULS S R6-20 DF2; CALCO ULS S R6-20 DF2 DYED; CALCO ULS S-B0-B5 DF2 DYED; Calco ULS S-B5 DF2; Calco ULS S-B5 DF2 DYED; CALCO ULS TC-B0-B5 DF2; CALCO ULS TC-B0-B5 DF2 DYD; CALCO ULS TC-B1 DF2; CALCO ULS TC-B1 DF2 DYED; CALCO ULS TC-B2 DF2; CALCO ULS TC-B2 DF2 DYED; CALCO ULS TC-B3 DF2; CALCO ULS TC-B3 DF2 DYED; CALCO ULS TC-B4 DF2; CALCO ULS TC-B4 DF2 DYED; CALCO ULS TC-B5 DF2; CALCO ULS TC-B5 DF2 DYED; CALCO ULS TX-B0-B5 DF2; CALCO ULS TX-B0-B5 DF2 DYD; CALCO ULS TX-B1 DF2; CALCO ULS TX-B1 DF2 DYED; CALCO ULS TX-B2 DF2; CALCO ULS TX-B2 DF2 DYED; CALCO ULS TX-B3 DF2; CALCO ULS TX-B3 DF2 DYED; CALCO ULS TX-B4 DF2; CALCO ULS TX-B4 DF2 DYED; CALCO ULS TX-B5 DF2; CALCO ULS TX-B5 DF2 DYED; Chevron LS Diesel 2; Chevron ULS Diesel 2; CT ULS C-B0-B5 DF2; CT ULS C-B0-B5 DF2 DYED; CT ULS C-B2 DF2; CT ULS C-B5 DF2; CT ULS S R6-20 B0-5 DF2; CT ULS S R6-20 DF2; CT ULS S R6-20 DF2 DYED; CT ULS S-B0-B5 DF2 DYED; CT ULS S-B5 DF2; CT ULS S-B5 DF2 DYED; CT ULS S-BO-B5 DF2; CT ULS SPECIAL DF2 DYED; CT ULS TC-B0-B5 DF2; CT ULS TC-B1 DF2; CT ULS TC-B2 DF2; CT ULS TC-B3 DF2; CT ULS TC-B4 DF2; CT ULS TC-B5 DF2; CT ULS TX-B0-B5 DF2; CT ULS TX-B1 DF2; CT ULS TX-B2 DF2; CT ULS TX-B3 DF2; CT ULS TX-B4 DF2; CT ULS TX-B5 DF2; Diesel Fuel Oil; Diesel Grade No. 2; Diesel No. 2-D S15; Diesel No. 2-D S500; Diesel No. 2-D S5000; Distillates, straight run; Gas Oil; HS Diesel 2; HS Heating Fuel 2; Light Diesel Oil Grade No. 2-D; LS Diesel 2; LS Heating Fuel 2; Marine Diesel; RR Diesel Fuel; Texaco Diesel; Texaco Diesel No. 2; ULS C-B0-B5 DF2; ULS C-B0-B5 DF2 DYED; ULS C-B2 DF2; ULS C-B2 DF2 DYED; ULS C-B5 DF2; ULS C-B5 DF2 DYED; ULS S R6-20 B0-5 DF2; ULS S R6-20 B0-5 DF2 DYED; ULS S R6-20 DF2; ULS S R6-20 DF2 DYED; ULS S-B0-B5 DF2 DYED; ULS S-B5 DF2; ULS S-BO-B5 DF2; ULS TC-B0-B5 DF2; ULS TC-B0-B5 DF2 DYED; ULS TC-B1 DF2; ULS TC-B1 DF2 DYED; ULS TC-B2 DF2; ULS TC-B2 DF2 DYED; ULS TC-B3 DF2; ULS TC-B3 DF2 DYED; ULS TC-B4 DF2; ULS TC-B4 DF2 DYED; ULS TC-B5 DF2; ULS TC-B5 DF2 DYED; ULS TX-B0-B5 DF2; ULS TX-B0-B5 DF2 DYED; ULS TX-B1 DF2; ULS TX-B1 DF2 DYED; ULS TX-B3 DF2; ULS TX-B3 DF2 DYED; ULS TX-B4 DF2; ULS TX-B4 DF2 DYED; ULS TX-B5 DF2; ULS TX-B5 DF2 DYED; Ultra Low Sulfur Diesel 2

Company Identification
Chevron Products Company
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency & Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information

Product Information: (800) 582-3835
SDS Requests: lubemsds@chevron.com

SPECIAL NOTES: This SDS covers all Chevron, Texaco and Calco CARB & non-CARB Diesel No. 2 Fuels. The sulfur content is less than 0.5% (mass). Red dye is added to non-taxable fuel. (SDS 6894)

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Flammable liquid: Category 3. Aspiration toxicant: Category 1. Carcinogen: Category 1B. Skin irritation: Category 2. Target organ toxicant (repeated exposure): Category 2. Target organ toxicant (central nervous system): Category 3. Acute inhalation toxicant: Category 4. Acute aquatic toxicant: Category 2. Chronic aquatic toxicant: Category 2.

Signal Word: Danger

Physical Hazards: Flammable liquid and vapor.

Health Hazards: May be fatal if swallowed and enters airways. May cause cancer. Causes skin irritation. Harmful if inhaled. May cause drowsiness or dizziness.

Target Organs: May cause damage to organs (Blood/Blood Forming Organs, Liver, Thymus) through prolonged or repeated exposure.

Environmental Hazards: Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:
General: Keep out of reach of children. Read label before use.
Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. -- No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting/equipment. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Use personal protective equipment as required. Wash thoroughly after handling. Avoid release to the environment.
Response: IF INHALED: Call a poison center or doctor/physician if you feel unwell. Remove person to fresh air and keep comfortable for breathing. IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. In case of fire: Use media specified in the SDS to extinguish. Specific treatment (see Notes to Physician on this label). Collect spillage. IF exposed or concerned: Get medical advice/attention.
Storage: Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Total sulfur	Mixture	0 - 5000 ppm

Diesel Fuel No. 2	68476-34-6	95 - 100 %volume
Renewable Diesel	Mixture	0 - 20 %volume
Fatty Acid Methyl Esters (FAME)	Mixture	0 - 5 %volume
Naphthalene	91-20-3	0.02 - < 0.2 %volume

SECTION 4 FIRST AID MEASURES

Description of first aid measures
Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.
Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue or if any other symptoms develop.

Most important symptoms and effects, both acute and delayed
IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin causes irritation. Symptoms may include pain, itching, discoloration, swelling, and blistering. Contact with the skin is not expected to cause an allergic skin response.
Ingestion: Highly toxic; may be fatal if swallowed. Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea.
Inhalation: May be harmful if inhaled. Excessive or prolonged breathing of this material may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:
Cancer: Whole diesel engine exhaust has been classified as a Group 2A carcinogen (probably carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Prolonged or repeated exposure to this material may cause cancer. Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
Target Organs: Contains material that may cause damage to the following organ(s) following repeated inhalation at concentrations above the recommended exposure limit based on animal data:Liver Blood/Blood Forming Organs Thymus See Section 11 for additional information. Risk depends on duration and level of exposure.

Indication of any immediate medical attention and special treatment needed
Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.
Unusual Fire Hazards: See Section 7 for proper handling and storage.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space

without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive force. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches.
Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Do not breathe mist. Wash thoroughly after handling. Keep out of the reach of children.
Unusual Handling Hazards: WARNING! Do not use as portable heater or appliance fuel. Toxic fumes may accumulate and cause death. Slow heat generation may occur with oil-soaked rags, spent filter aids and spent absorbent material and may cause spontaneous combustion if stored near combustibles and not handled properly. Store biodiesel soaked rags, filter aids, and spill absorbent material in approved safety disposal containers and dispose of properly. Biodiesel soaked rags may be washed with soap and water and allowed to dry in well ventilated area.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other

substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.
When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	Form	TWA	STEL	Ceiling	Notation
Diesel Fuel No. 2	ACGIH	Inhalable fraction and vapor	100 mg/m3	--	--	Skin total hydrocarbon
Diesel Fuel No. 2	ACGIH	Vapor	100 mg/m3	--	--	Skin
Diesel Fuel No. 2	ACGIH	Vapor and aerosol	100 mg/m3	--	--	Skin total hydrocarbon
Diesel Fuel No. 2	CVX	Vapor and aerosol	100 mg/m3	--	--	Skin total hydrocarbon
Naphthalene	ACGIH	Vapor	10 ppm	15 ppm	--	A4 Skin
Naphthalene	ACGIH	--	10 ppm	--	--	Skin
Naphthalene	OSHA Z-1	--	50 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Varies depending on specification
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: 0.04 kPa (Approximate) @ 40 °C (104 °F)
Vapor Density (Air = 1): >1
Initial Boiling Point: 175.6°C (348.1°F) - 370°C (698°F)
Solubility: Soluble in hydrocarbons; insoluble in water

Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.80 - 0.88 @ 15.6°C (60.1°F) (Typical)
Density: No data available
Viscosity: 1.90 cSt - 4.10 cSt @ 40°C (104°F)
Coefficient of Therm. Expansion / °F: No data available
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:
Flammability (solid, gas): No Data Available

Flashpoint: (Pensky-Martens Closed Cup) 52 °C (125 °F) (Minimum)
Autoignition: 257 °C (494 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 0.6 Upper: 4.7

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Conditions to Avoid: Avoid contact with heat, sparks, fire and oxidizing agents
Incompatibility With Other Materials: Not applicable
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for similar materials.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for similar materials.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials.
Acute Toxicity Estimate (inhalation): 1.2 mg/l

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material. Whole diesel engine exhaust has been classified as a Group 2A carcinogen (probably carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains gas oils.

CONCAWE (product dossier 95/107) has summarized current health, safety and environmental data available for a number of gas oils, typically hydrodesulfurized middle distillates, CAS 64742-80-9, straight-run middle distillates, CAS 64741-44-2, and/or light cat-cracked distillate CAS 64741-59-9. CARCINOGENICITY: All materials tested have caused the development of skin tumors in mice, but all featured severe skin irritation and sometimes a long latency period before tumors developed. Straight-run and cracked gas oil samples were studied to determine the influence of dermal irritation on the carcinogenic activity of middle distillates. At non-irritant doses the straight-run gas oil was not carcinogenic, but at irritant doses, weak activity was demonstrated. Cracked gas oils, when diluted with mineral oil, demonstrated carcinogenic activity irrespective of the occurrence of skin irritation. Gas oils were tested on male mice to study tumor initiating/promoting activity. The results demonstrated that while a straight-run gas oil sample was neither an initiator or promotor, a blend of straight-run and FCC stock was both a tumor initiator and a promoter.

GENOTOXICITY: Hydrotreated & hydrodesulfurized gas oils range in activity from inactive to weakly positive in in-vitro bacterial mutagenicity assays. Mouse lymphoma assays on straight-run gas oils without subsequent hydrodesulphurization gave positive results in the presence of S9 metabolic activation. In-vivo bone marrow cytogenetics and sister chromatic exchange assay exhibited no activity for straight-run components with or without hydrodesulphurization. Thermally or catalytically cracked gas oils tested with in-vitro bacterial mutagenicity assays in the presence of S9 metabolic activation were shown to be mutagenic. In-vitro sister chromatic exchange assays on cracked gas oil gave equivocal results both with and without S9 metabolic activation. In-vivo bone marrow cytogenetics assay was inactive for two cracked gas oil samples. Three hydrocracked gas oils were tested with in-vitro bacterial mutagenicity assays with S9, and one of the three gave positive results. Twelve distillate fuel samples were tested with in-vitro bacterial mutagenicity assays & with S9 metabolic activation and showed negative to weakly positive results. In one series, activity was shown to be related to the PCA content of samples tested. Two in-vivo studies were also conducted. A mouse dominant lethal assay was negative for a sample of diesel fuel. In the other study, 9 samples of No 2 heating oil containing 50% cracked stocks caused a slight increase in the number of chromosomal aberrations in bone marrow cytogenetics assays. DEVELOPMENTAL TOXICITY: Diesel fuel vapor did not cause fetotoxic or teratogenic effects when pregnant rats were exposed on days 6-15 of pregnancy. Gas oils were applied to the skin of pregnant rats daily on days 0-19 of gestation. All but one (coker light gas oil) caused fetotoxicity (increased resorptions, reduced litter weight, reduced litter size) at dose levels that were also maternally toxic.

The National Institute of Occupational Safety and Health (NIOSH) has recommended that whole diesel exhaust be regarded as potentially causing cancer. This recommendation was based on test results showing increased lung cancer in laboratory animals exposed to whole diesel exhaust.

This product contains naphthalene.

GENERAL TOXICITY: Exposure to naphthalene has been reported to cause methemoglobinemia and/or hemolytic anemia, especially in humans deficient in the enzyme glucose-6-phosphate dehydrogenase. Laboratory animals given repeated oral doses of naphthalene have developed cataracts. REPRODUCTIVE TOXICITY AND BIRTH DEFECTS: Naphthalene did not cause birth defects when administered orally to rabbits, rats, and mice during pregnancy, but slightly reduced litter size in mice at dose levels that were lethal to the pregnant females. Naphthalene has been reported to cross the human placenta. GENETIC TOXICITY: Naphthalene caused chromosome aberrations and sister chromatid exchanges in Chinese hamster ovary cells, but was not a mutagen in several other in-vitro tests.CARCINOGENICITY: In a study conducted by the National Toxicology Program (NTP), mice exposed to 10 or 30 ppm of naphthalene by inhalation daily for two years had chronic inflammation of the nose and lungs and increased incidences of metaplasia in those tissues. The incidence of benign lung tumors (alveolar/bronchiolar adenomas) was significantly increased in the high-dose female group but not in the male groups. In another two-year inhalation study conducted by NTP, exposure of rats to 10, 30, and 60 ppm naphthalene caused increases in the incidences of a variety of nonneoplastic lesions in the nose. Increases in nasal tumors were seen in both sexes, including olfactory neuroblastomas in females at 60 ppm and adenomas of the respiratory epithelium in males at all exposure levels. The relevance of these effects to humans has not been established. No carcinogenic effect was reported in a 2-year feeding study in rats receiving naphthalene at 41 mg/kg/day.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
A series of studies on the acute toxicity of 4 diesel fuel samples were conducted by one laboratory using water accommodated fractions. The range of effective (EC50) or lethal concentrations (LC50) expressed as loading rates were: This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

72 hour(s) EC50: 2.6-25 mg/l (Selenastrum capricornutum)
96 hour(s) LC50: 21-210 mg/l (Salmo gairdneri)
48 hour(s) EC50: 20-210 mg/l (Daphnia magna)

MOBILITY
No data available.

PERSISTENCE AND DEGRADABILITY
This material is not expected to be readily biodegradable. On release to the environment the lighter components of diesel fuel will generally evaporate but depending on local environmental conditions (temperature, wind, mixing or wave action, soil type, etc.) the remainder may become dispersed in the water column or absorbed to soil or sediment. Diesel fuel would not be expected to be readily biodegradable. In a modified Strum test (OECD method 301B) approximately 40% biodegradation was recorded over 28 days. However, it has been shown that most hydrocarbon components of diesel fuel are degraded in soil in the presence of oxygen. Under anaerobic conditions, such as in anoxic sediments, rates of biodegradation are negligible.
The product has not been tested. The statement has been derived from products of a similar structure and composition.

POTENTIAL TO BIOACCUMULATE
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: For packages with an Initial Boiling Point > 35 deg C and a Flash Point (PM Closed Cup) >/= 23 deg C but </= 60 deg C: UN1202, GAS OIL, 3, III; OPTIONAL DISCLOSURE: UN1202, GAS OIL, 3, III, MARINE POLLUTANT (DIESEL FUEL) Optional disclosure per 49 CFR when Flash Point (PM Closed Cup) >/= 38 deg C < 93 deg C per 49 173.150 (f): UN1202, GAS OIL, COMBUSTIBLE LIQUID, III; NON-BULK PACKAGES ARE EXEMPTED FROM THE PROVISIONS OF 49 CFR IN USA JURISDICTIONS Optional disclosure as a GHS Environmental Hazard/Marine Pollutant when Flash Point (PM Closed Cup) > 60 deg C: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(DIESEL FUEL), 9, III, MARINE POLLUTANT (DIESEL FUEL)

IMO/IMDG Shipping Description: For packages with an Initial Boiling Point > 35 deg C and a Flash Point (PM Closed Cup) >/= 23 deg C, </= 60 deg C: UN1202, GAS OIL, 3, III, FLASH POINT SEE SECTION 5 OR 9, MARINE POLLUTANT (DIESEL FUEL); OPTIONAL DISCLOSURE: UN1268, PETROLEUM DISTILLATES, N.O.S. (DIESEL FUEL), 3, III, FLASH POINT SEE SECTION 5 OR 9, MARINE

POLLUTANT (DIESEL FUEL) For packages with a Flash Point (PM Closed Cup) > 60 deg C: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIESEL FUEL), 9, III, MARINE POLLUTANT (DIESEL FUEL)

ICAO/IATA Shipping Description: For packages with an Initial Boiling Point > 35 deg C and a Flash Point (PM Closed Cup) >/= 23 deg C, </= 60 deg C: UN1202, GAS OIL, 3, III For packages with a Flash Point (PM Closed Cup) > 60 deg C: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIESEL FUEL), 9, III, MARINE POLLUTANT (DIESEL FUEL)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:
Acute toxicity (any route of exposure)
Aspiration Hazard
Carcinogenicity
Flammable (gases, aerosols, liquids, or solids)
Skin Corrosion or Irritation
Specific target organ toxicity (single or repeated exposure)

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Diesel Fuel No. 2	07
Naphthalene	01-2B, 02, 04, 06

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: DSL (Canada), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: DIESEL FUEL

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 1 Flammability: 2 Reactivity: 0

HMIS RATINGS: Health: 2* Flammability: 2 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *-Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

Additional Product Number(s): 203408, 203410, 203413, 203417, 203431, 203436, 203437, 203441, 203443, 203447, 203449, 203450, 203477990, 203480990, 203481990, 203482990, 203483990, 203484990, 203485990, 203486990, 203487990, 203488990, 203489990, 220122, 225114, 225115, 225150, 266176, 270000, 270005, 270006990, 270007990, 270008990, 270009990, 270010990, 270013990, 270014990, 270015990, 270016990,

270017990, 270030, 270031, 270032, 270033, 270034, 270040, 270041, 270042, 270043, 270044, 270045, 270046, 270047, 270048, 270049, 270050, 270051, 270052, 270053, 270054, 270058, 270059, 270060, 270062, 270063, 270064, 270065, 270068, 270069, 270070, 270081, 270082, 270083, 270084, 270085, 270086, 270087, 270088, 270089, 270090, 270091, 270094, 270095, 270096, 270100, 270101, 270102, 270103, 270104, 270105, 270106, 270107, 270108, 270109, 270110, 270111, 270112, 270113, 270114, 270115, 270116, 270117, 270118, 270119, 270120, 270121, 270122, 270123, 270124, 271006, 272006, 272007, 272008, 272009, 272010, 272011, 272012, 272013, 272093, 272102, 272126, 272129, 272130, 272131, 272152, 272185, 272190, 272195, 272593, 272601, 272602, 272693, 272793, 273003, 273030, 273053, 275000

REVISION STATEMENT: SECTION 03 - Composition information was modified.
SECTION 04 - Immediate Health Effects - Inhalation information was modified.
SECTION 07 - Precautionary Measures information was modified.
SECTION 08 - General Considerations information was modified.
SECTION 08 - Occupational Exposure Limit Table information was modified.
SECTION 09 - Physical/Chemical Properties information was modified.
SECTION 11 - Additional Toxicology Information information was modified.
SECTION 12 - Ecological Information information was modified.
SECTION 15 - Chemical Inventories information was modified.
SECTION 15 - New Jersey Right To Know information was modified.
SECTION 15 - Regulatory Information information was deleted.
SECTION 15 - SARA 311 EPCRA Score information was modified.

Revision Date: April 16, 2020

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **EZ-MUD®**

Revision Date: 02-Dec-2013

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: EZ-MUD®
Synonyms: None
Chemical Family: Blend
Application: Shale Inhibitor

Manufacturer/Supplier
Baroid Fluid Services
Product Service Line of Halliburton
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

Prepared By
Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Hydrotreated light petroleum distillate	64742-47-8	10 - 30%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview
May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed.

4. FIRST AID MEASURES

Inhalation
If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin
Wash with soap and water. Get medical attention if irritation persists. Remove contaminated shoes and discard.

Eyes
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion
Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

Notes to Physician
Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	> 200
Flash Point/Range (C):	Not Determined
Flash Point Method:	PMCC
Autoignition Temperature (F):	> 392
Autoignition Temperature (C):	> 200
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Decomposition in fire may produce toxic gases. Use water spray to cool fire exposed surfaces.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 2, Flammability 1, Reactivity 0
HMIS Ratings: Health 2, Flammability 1, Physical Hazard 0 , PPE: B

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from oxidizers. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Organic vapor respirator with a dust/mist filter. (A2P2/P3) In high concentrations, supplied air respirator or a self-contained breathing apparatus.

Hand Protection Impervious rubber gloves.

Skin Protection	Rubber apron.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	White to gray
Odor:	Mild hydrocarbon
pH:	6-8
Specific Gravity @ 20 C (Water=1):	1.0
Density @ 20 C (lbs./gallon):	8.3
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	347
Boiling Point/Range (C):	175
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	0.002
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	70
Evaporation Rate (Butyl Acetate=1):	< 1
Solubility in Water (g/100ml):	Partially soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.

Sympotoms related to exposure

Acute Toxicity

Inhalation	May cause mild respiratory irritation.
Eye Contact	May cause mild eye irritation.
Skin Contact	May cause mild skin irritation.

Ingestion Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 1% are chronic health hazards.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydrotreated light petroleum distillate	64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	5.2 mg/L (Rat) 4 h

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

Ecotoxicity Product

Acute Fish Toxicity: TLM96: >1000 mg/l (Pimephales promelas)
Acute Crustaceans Toxicity: TLM48: 98 mg/l (Acartia tonsa)
Acute Algae Toxicity: EC50: 16.70 mg/l (Skeletonema costatum)

Ecotoxicity Substance

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Hydrotreated light petroleum distillate	64742-47-8	EC50(72h): > 10,000 mg/L (Skeletonema costatum) (ISO 10253)	LC50 96h): > 10,000 mg/L (Scophthalmus maximus) (OSPARCOM 1995)	No information available	LC50(48h): > 10,000 mg/L (Acartia tonsa) (ISO 14669)

12.2 Persistence and degradability
No information available

12.3 Bioaccumulative potential

Substances	Log Pow
Hydrotreated light petroleum distillate	7.5

12.4 Mobility in soil
No information available

12.5 Results of PBT and vPvB assessment
No information available.

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Transportation Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory or are exempt.
WHMIS Hazard Class	D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS
Not applicable

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

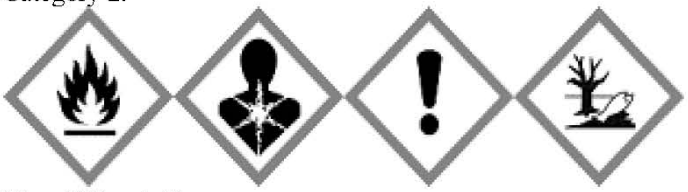
CHEVRON and TEXACO REGULAR UNLEADED GASOLINES

Product Use: Fuel
Product Number(s): 201000, 204039, 204054, 204067, 204086, 204139, 204153, 204297, 204307, 204310, 204585, 204750, 204751 [See Section 16 for Additional Product Numbers]
Synonyms: Calco Regular Unleaded Gasoline; Chevron Regular Unleaded Gasoline; Chevron UL/CQ Gasoline; Gasolines, Automotive; Texaco Unleaded Gasoline
Company Identification
Chevron Products Company
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
Product Information: (800) 582-3835
SDS Requests: lubemsds@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Flammable liquid: Category 1. Aspiration toxicant: Category 1. Carcinogen: Category 1A. Target organ toxicant (repeated exposure): Category 1. Eye irritation: Category 2A. Germ Cell Mutagen: Category 1B. Skin irritation: Category 2. Reproductive toxicant (developmental): Category 2. Target organ toxicant (central nervous system): Category 3. Acute aquatic toxicant: Category 2. Chronic aquatic toxicant: Category 2.



Signal Word: Danger

Physical Hazards: Extremely flammable liquid and vapor.

Health Hazards: May be fatal if swallowed and enters airways. May cause genetic defects. May cause cancer.

Causes skin irritation. Causes serious eye irritation. Suspected of damaging the unborn child. May cause drowsiness or dizziness.

Target Organs: Causes damage to organs (Blood/Blood Forming Organs) through prolonged or repeated exposure.

Environmental Hazards: Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:
General: Keep out of reach of children. Read label before use.
Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. -- No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting/equipment. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment.
Response: In case of fire: Use media specified in the SDS to extinguish. IF exposed or concerned: Get medical advice/attention. IF INHALED: Call a poison center or doctor/physician if you feel unwell. Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. Specific treatment (see Notes to Physician on this label). Collect spillage.
Storage: Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

Hazardous Substance(s) or Complex Substance(s) required for disclosure

COMPONENTS	CAS NUMBER	AMOUNT
Gasoline	86290-81-5	100 %volume

Hazardous Constituent(s) Contained in Complex Substance(s) required for disclosure

COMPONENTS	CAS NUMBER	AMOUNT
Toluene	108-88-3	1 - 35 %volume
Xylene	1330-20-7	1 - 15 %volume
Pentane isomers (pentanes)	MIXTURE	1 - 13 %volume
Butane	106-97-8	1 - 12 %volume
Ethanol	64-17-5	0 - 10 %volume
Hexane	110-54-3	1 - 5 %volume
Benzene	71-43-2	0.1 - 5 %volume
Heptane	142-82-5	1 - 4 %volume
Ethylbenzene	100-41-4	0.1 - 3 %volume
Cyclohexane	110-82-7	1 - 3 %volume
Methylcyclohexane	108-87-2	1 - 2 %volume
Naphthalene	91-20-3	0.1 - 2 %volume

Motor gasoline is considered a mixture by EPA under the Toxic Substances Control Act (TSCA). The refinery

streams used to blend motor gasoline are all on the TSCA Chemical Substances Inventory. The appropriate CAS number for refinery blended motor gasoline is 86290-81-5. The product specifications of motor gasoline sold in your area will depend on applicable Federal and State regulations.

SECTION 4 FIRST AID MEASURES

Description of first aid measures
Eye: Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get immediate medical attention.
Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.
Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue or if any other symptoms develop.

Most important symptoms and effects, both acute and delayed
IMMEDIATE HEALTH EFFECTS
Eye: Contact with the eyes causes severe irritation. Symptoms may include pain, tearing, reddening, swelling and impaired vision.
Skin: Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Symptoms may include pain, itching, discoloration, swelling, and blistering. Contact with the skin is not expected to cause an allergic skin response.
Ingestion: Highly toxic; may be fatal if swallowed. Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea.
Inhalation: Excessive or prolonged breathing of this material may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:
Reproduction and Birth Defects: Contains material that may cause harm to the unborn child if inhaled above the recommended exposure limit.
Cancer: Prolonged or repeated exposure to this material may cause cancer. Gasoline has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Whole gasoline exhaust has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Contains ethylbenzene which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Genetic Toxicity: Contains material that may cause heritable genetic damage based on animal data.
Target Organs: Contains material that may cause damage to the following organ(s) following repeated inhalation at concentrations above the recommended exposure limit:Blood/Blood Forming Organs See Section 11 for additional information. Risk depends on duration and level of exposure.

Indication of any immediate medical attention and special treatment needed
Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Dry Chemical, CO2, Aqueous Film Forming Foam (AFFF) or alcohol resistant foam.
Unusual Fire Hazards: See Section 7 for proper handling and storage.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Never siphon gasoline by mouth.
Do not store in open or unlabeled containers. READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL. Use only as a motor fuel. Do not use for cleaning, pressure appliance fuel, or any other such use. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling. Keep out of the reach of children.
Static Hazard: Improper filling of portable gasoline containers creates danger of fire. Only dispense gasoline into approved and properly labeled gasoline containers. Always place portable containers on the ground. Be sure pump nozzle is in contact with the container while filling. Do not use a nozzle's lock-open device. Do not fill portable containers that are inside a vehicle or truck/trailer bed.

Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.
Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.
When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Gasoline	ACGIH	300 ppm (weight)	500 ppm (weight)	--	A3
Toluene	ACGIH	20 ppm (weight)	--	--	--

Toluene	OSHA Z-2	200 ppm (weight)	--	300 ppm (weight)	--
Xylene	ACGIH	100 ppm (weight)	150 ppm (weight)	--	--
Xylene	OSHA Z-1	435 mg/m3	--	--	--
Pentane isomers (pentanes)	Not Applicable	--	--	--	--
Butane	ACGIH	--	1000 ppm (weight)	--	--
Ethanol	ACGIH	1000 ppm (weight)	--	--	A4 A3
Ethanol	OSHA Z-1	1900 mg/m3	--	--	--
Benzene	ACGIH	.5 ppm (weight)	2.5 ppm (weight)	--	Skin A1 Skin
Hexane	ACGIH	50 ppm (weight)	--	--	Skin
Benzene	CVX	1 ppm (weight)	5 ppm (weight)	--	--
Benzene	OSHA SRS	1 ppm (weight)	5 ppm (weight)	--	--
Hexane	OSHA Z-1	1800 mg/m3	--	--	--
Benzene	OSHA Z-2	10 ppm (weight)	--	25 ppm (weight)	--
Heptane	ACGIH	400 ppm (weight)	500 ppm (weight)	--	--
Heptane	OSHA Z-1	2000 mg/m3	--	--	--
Cyclohexane	ACGIH	100 ppm (weight)	--	--	--
Ethylbenzene	ACGIH	20 ppm (weight)	--	--	A3
Ethylbenzene	OSHA Z-1	435 mg/m3	--	--	--
Cyclohexane	OSHA Z-1	1050 mg/m3	--	--	--
Methylcyclohexane	ACGIH	400 ppm (weight)	--	--	--
Naphthalene	ACGIH	10 ppm (weight)	15 ppm	--	Skin A3
Naphthalene	OSHA Z-1	50 mg/m3	--	--	--
Methylcyclohexane	OSHA Z-1	2000 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless to yellow
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: 5 psi - 15.50 psi (Typical) @ 37.8 °C (100 °F)
Vapor Density (Air = 1): 3 - 4 (Typical)
Initial Boiling Point: 27.2°C (81°F) - 52.8°C (127°F) (Typical)
Solubility: Negligible
Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.70 g/ml - 0.80 g/ml @ 15.6°C (60.1°F) (Typical)
Viscosity: <1 SUS @ 37.8°C (100°F)
Evaporation Rate: No data available
Decomposition temperature: No data available

Octanol/Water Partition Coefficient: 2 - 7

FLAMMABLE PROPERTIES:
Flammability (solid, gas): No Data Available

Flashpoint: (Tagliabue Closed Cup ASTM D56) < -45 °C (< -49 °F)
Autoignition: > 280 °C (> 536 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 1.4 Upper: 7.6

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: Not applicable
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: For a 4-hour exposure, the Primary Irritation Index (PII) in rabbits is: 4.8/8.0.

Skin Sensitization: This material did not cause skin sensitization reactions in a Buehler guinea pig test.

Acute Dermal Toxicity: LD50: >3.75 g/kg (rabbit).

Acute Oral Toxicity: LD50: >5 ml/kg (rat).

Acute Inhalation Toxicity: 4 hour(s) LD50: >20000 mg/m3 (rat).
Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material. Gasoline has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Whole gasoline exhaust has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Contains ethylbenzene which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

Gasolines are highly volatile and can produce significant concentrations of vapor at ambient temperatures. Gasoline vapor is heavier than air and at high concentrations may accumulate in confined spaces to present both safety and health hazards. When vapor exposures are low, or short duration and infrequent, such as during refueling and tanker loading/unloading, neither total hydrocarbon nor components such as benzene are likely to result in any adverse health effects. In situations such as accidents or spills where exposure to gasoline vapor is potentially high, attention should be paid to potential toxic effects of specific components. Information about specific components in gasoline can be found in Sections 2/3, 8 and 15 of this MSDS. More detailed information on the health hazards of specific gasoline components can be obtained calling the Chevron Emergency Information Center (see Section 1 for phone numbers).

Pathological misuse of solvents and gasoline, involving repeated and prolonged exposure to high concentrations of vapor is a significant exposure on which there are many reports in the medical literature. As with other solvents, persistent abuse involving repeated and prolonged exposures to high concentrations of vapor has been reported to result in central nervous system damage and eventually, death. In a study in which ten human volunteers were exposed for 30 minutes to approximately 200, 500 or 1000 ppm concentrations of gasoline vapor, irritation of the eyes was the only significant effect observed, based on both subjective and objective assessments.

Lifetime inhalation of wholly vaporized unleaded gasoline at 2056 ppm has caused increased liver tumors in female mice and kidney cancer in male rats. In their 1988 review of carcinogenic risk from gasoline, The International Agency for Research on Cancer (IARC) noted that, because published epidemiology studies did not include any exposure data, only occupations where gasoline exposure may have occurred were reviewed. These included gasoline service station attendants and automobile mechanics. IARC also noted that there was no opportunity to separate effects of combustion products from those of gasoline itself. Although IARC allocated gasoline a final overall classification of Group 2B, i.e. possibly carcinogenic to humans, this was based on limited evidence in experimental animals plus supporting evidence including the presence in gasoline of benzene. The actual evidence for carcinogenicity in humans was considered inadequate.

MUTAGENICITY: Gasoline was not mutagenic, with or without activation, in the Ames assay (Salmonella typhimurium), Saccharamyces cerevisesae, or mouse lymphoma assays. In addition, point mutations were not induced in human lymphocytes. Gasoline was not mutagenic when tested in the mouse dominant lethal assay. Administration of gasoline to rats did not cause chomosomal aberrations in their bone marrow cells.
EPIDEMIOLOGY: To explore the health effects of workers potentially exposed to gasoline vapors in the marketing and distribution sectors of the petroleum industry, the American Petroleum Institute sponsored a cohort mortality study (Publication 4555), a nested case-control study (Publication 4551), and an exposure assessment study (Publication 4552). Histories of exposure to gasoline were reconstructed for cohort of more than 18,000 employees from four companies for the time period between 1946 and 1985. The results of the cohort mortality study indicated that there was no increased mortality from either kidney cancer or leukemia among marketing and marine distribution employees who were exposed to gasoline in the petroleum industry, when compared to the general population. More importantly, based on internal comparisons, there was no association between mortality from kidney cancer or leukemia and various indices of gasoline exposure. In particular, neither duration of employment, duration of exposure, age at first exposure, year of first exposure, job category, cumulative exposure, frequency of peak exposure, nor average intensity of exposure had any effect on kidney cancer or leukemia mortality. The results of the nested case-control study confirmed the findings of the original cohort study. That is, exposure to gasoline at the levels experienced by this cohort of distribution workers is not a significant risk factor for leukemia (all cell types), acute myeloid leukemia, kidney cancer or multiple myeloma.

This product contains ethylbenzene.

BIRTH DEFECTS AND REPRODUCTION: Ethylbenzene is not expected to cause birth defects or other developmental effects based on well-conducted studies in rabbits and rats sponsored by NIOSH. Other studies in rats and mice which reported urinary tract malformations have many deficiencies and have limited usefulness in evaluating human risk. Reproductive effects are not expected based on a NIOSH study of fertility, and lack of effects observed for sperm counts and motility, estrous cycle and pathology of reproductive organs following repeated exposures. HEARING: Statistically significant losses in outer hair cells (OHCs) were observed in rats

exposed to >=200 ppm ethylbenzene, 6 hours/day, 6 days/week for 13 weeks, after an 8-week recovery period. Following longer exposure, inner hair cells losses were also observed in rats exposed to >= 600 ppm ethylbenzene, but only occasionally in rats exposed to 400 ppm. The Lowest Observed Adverse Effect Level in rats (LOAEL) was 200 ppm for losses of OHCs. Guinea pigs exposed to ethylbenzene at 2,500 ppm, 6 hours/day for 5 days did not show auditory deficits or losses in OHCs. The concentration of ethylbenzene used in the JP-8 study was approximately 10 ppm. GENETIC TOXICITY: Ethylbenzene tested negative in the bacterial mutation test, Chinese Hamster Ovary (CHO) cell in vitro assay, sister chromatid exchange assay and an unscheduled DNA synthesis assay. Conflicting results have been reported for the mouse lymphoma cell assay. Increased micronuclei were reported in an in vitro Syrian hamster embryo cell assay; however, two in vivo micronuclei studies in mice were negative. In Syrian hamster embryo cells in vitro, cell transformation was observed at 7 days of incubation but not at 24 hours. Based on these results, ethylbenzene is not expected to be mutagenic or clastogenic. CARCINOGENICITY: In studies conducted by the National Toxicology Program, rats and mice were exposed to ethylbenzene at 25, 250 and 750 ppm for six hours per day, five days per week for 103 weeks. In rats exposed to 750 ppm, the incidence of kidney tubule hyperplasia and tumors was increased. Testicular tumors develop spontaneously in nearly all rats if allowed to complete their natural life span; in this study, the development of these tumors appeared to be enhanced in male rats exposed to 750 ppm. In mice, the incidences of lung tumors in males and liver tumors in females exposed to 750 ppm were increased as compared to control mice but were within the range of incidences observed historically in control mice. Other liver effects were observed in male mice exposed to 250 and 750 ppm. The incidences of hyperplasia were increased in the pituitary gland in female mice at 250 and 750 ppm and in the thyroid in male and female mice at 750 ppm.

This product contains toluene.
GENERAL TOXICITY: The primary effects of exposure to toluene in animals and humans are on the central nervous system. Solvent abusers, who typically inhale high concentrations (thousands of ppm) for brief periods of time, in addition to experiencing respiratory tract irritation, often suffer permanent central nervous system effects that include tremors, staggered gait, impaired speech, hearing and vision loss, and changes in brain tissue. Death in some solvent abusers has been attributed to cardiac arrhythmias, which appear to be have been triggered by epinephrine acting on solvent sensitized cardiac tissue. Although liver and kidney effects have been seen in some solvent abusers, results of animal testing with toluene do not support these as primary target organs.
HEARING: Humans who were occupationally exposed to concentrations of toluene as low as 100 ppm for long periods of time have experienced hearing deficits. Hearing loss, as demonstrated using behavioral and electrophysiological testing as well as by observation of structural damage to cochlear hair cells, occurred in experimental animals exposed to toluene. It also appears that toluene exposure and noise may interact to produce hearing deficits.
COLOR VISION: In a single study of workers exposed to toluene at levels under 50 ppm, small decreases in the ability to discriminate colors in the blue-yellow range have been reported for female workers. This effect, which should be investigated further, is very subtle and would not likely have been noticed by the people tested.
REPRODUCTIVE/DEVELOPMENTAL TOXICITY: Toluene may also cause mental and/or growth retardation in the children of female solvent abusers who directly inhale toluene (usually at thousands of ppm) when they are pregnant. Toluene caused growth retardation in rats and rabbits when administered at doses that were toxic to the mothers. In rats, concentrations of up to 5000 ppm did not cause birth defects. No effects were observed in the offspring at doses that did not intoxicate the pregnant animals. The exposure level at which no effects were seen (No Observed Effect Level, NOEL) is 750 ppm in the rat and 500 ppm in the rabbit.

This product contains xylene.
ACUTE TOXICITY: The primary effects of exposure to xylene in animals and humans are on the central nervous system. In addition,in some individuals, xylene exposure can sensitize cardiac tissue to epinephrine which may precipitate fatal ventricular fibrillation. DEVELOPMENTAL TOXICITY: Xylene has been reported to cause developmental toxicity in rats and mice exposed by inhalation during pregnancy. The effects noted consisted of delayed development and minor skeletal variations. In addition, when pregnant mice were exposed by ingestion to a level that killed nearly one-third of the test group, lethality (resorptions) and malformations (primarily cleft palate) occurred. Since xylene can cross the placenta, it may be appropriate to prevent exposure during pregnancy.
GENETIC TOXICITY/CARCINOGENICITY: Xylene was not genotoxic in several mutagenicity testing assays including the Ames test. In a cancer study sponsored by the National Toxicology Program (NTP),technical grade

xylene gave no evidence of carcinogenicity in rats or mice dosed daily for two years. HEARING: Mixed xylenes have been shown to cause measurable hearing loss in rats exposed to 800 ppm in the air for 14 hours per day for six weeks. Exposure to 1450 ppm xylene for 8 hours caused hearing loss while exposure to 1700 ppm for 4 hours did not. Although no information is available for lower concentrations, other chemicals that cause hearing loss in rats at relatively high concentrations do not cause hearing loss in rats at low concentrations. Worker exposure to xylenes at the permissible exposure limit (100 ppm, time-weighted average) is not expected to cause hearing loss.

This product contains naphthalene.
GENERAL TOXICITY: Exposure to naphthalene has been reported to cause methemoglobinemia and/or hemolytic anemia, especially in humans deficient in the enzyme glucose-6-phosphate dehydrogenase. Laboratory animals given repeated oral doses of naphthalene have developed cataracts. REPRODUCTIVE TOXICITY AND BIRTH DEFECTS: Naphthalene did not cause birth defects when administered orally to rabbits, rats, and mice during pregnancy, but slightly reduced litter size in mice at dose levels that were lethal to the pregnant females. Naphthalene has been reported to cross the human placenta. GENETIC TOXICITY: Naphthalene caused chromosome aberrations and sister chromatid exchanges in Chinese hamster ovary cells, but was not a mutagen in several other in-vitro tests.CARCINOGENICITY: In a study conducted by the National Toxicology Program (NTP), mice exposed to 10 or 30 ppm of naphthalene by inhalation daily for two years had chronic inflammation of the nose and lungs and increased incidences of metaplasia in those tissues. The incidence of benign lung tumors (alveolar/bronchiolar adenomas) was significantly increased in the high-dose female group but not in the male groups. In another two-year inhalation study conducted by NTP, exposure of rats to 10, 30, and 60 ppm naphthalene caused increases in the incidences of a variety of nonneoplastic lesions in the nose. Increases in nasal tumors were seen in both sexes, including olfactory neuroblastomas in females at 60 ppm and adenomas of the respiratory epithelium in males at all exposure levels. The relevance of these effects to humans has not been established. No carcinogenic effect was reported in a 2-year feeding study in rats receiving naphthalene at 41 mg/kg/day.

This product contains cyclohexane.
Cyclohexane primarily affects the central nervous systems of laboratory animals and humans. Acute or prolonged inhalation of cyclohexane at levels below the recommended exposure limits does not result in toxic effects while acute exposures to levels above these recommended limits can cause reversible central nervous system depression. Prolonged exposures of laboratory animals to high levels (up to low thousands of parts per million) have also caused reversible effects which included hyperactivity, diminished response to stimuli, and adaptive liver changes while very high levels (high thousands of parts per million) were fatal. No developmental effects were seen in rats or rabbits following exposures of up to 7000 ppm cyclohexane. No reproductive effects occurred in rats, although postnatal pup growth was reduced at 7000 ppm in a similar manner as observed in the parental animals. Cyclohexane has not been shown to be mutagenic in several in vitro and in vivo assays and has not produced tumors in several dermal application long-term bioassays. Based on these results and the lack of any mutagenic or genotoxic metabolites, cyclohexane is not expected to be mutagenic or genotoxic. Following dermal exposure, cyclohexane is rapidly absorbed, metabolized,and excreted.

This product contains ethanol (ethyl alcohol).
Chronic ingestion of ethanol can damage the liver, nervous system and heart. Chronic heavy consumption of alcoholic beverages has been associated with an increased risk of cancer. Ingestion of ethanol during pregnancy can cause human birth defects such as fetal alcohol syndrome.
This product contains butane.
An atmospheric concentration of 100,000 ppm (10%) butane is not noticeably irritating to the eyes, nose or respiratory tract, but will produce slight dizziness in a few minutes of exposure. No chronic systemic effect has been reported from occupational exposure.

This product contains benzene.
GENETIC TOXICITY/CANCER: Repeated or prolonged breathing of benzene vapor has been associated with the development of chromosomal damage in experimental animals and various blood diseases in humans ranging from aplastic anemia to leukemia (a form of cancer). All of these diseases can be fatal. In some individuals, benzene exposure can sensitize cardiac tissue to epinephrine which may precipitate fatal ventricular fibrillation. REPRODUCTIVE/DEVELOPMENTAL TOXICITY: No birth defects have been shown to occur in pregnant

laboratory animals exposed to doses not toxic to the mother. However, some evidence of fetal toxicity such as delayed physical development has been seen at such levels. The available information on the effects of benzene on human pregnancies is inadequate but it has been established that benzene can cross the human placenta.
OCCUPATIONAL: The OSHA Benzene Standard (29 CFR 1910.1028) contains detailed requirements for training, exposure monitoring, respiratory protection and medical surveillance triggered by the exposure level. Refer to the OSHA Standard before using this product.

This product contains n-hexane.
TARGET ORGAN TOXICITY: Prolonged or repeated ingestion, skin contact or breathing of vapors of n-hexane has been shown to cause peripheral neuropathy. Recovery ranges from no recovery to complete recovery depending upon the severity of the nerve damage. Exposure to 1000 ppm n-hexane for 18 hr/day for 61 days has been shown to cause testicular damage in rats. However, when rats were exposed to higher concentrations for shorter daily periods (10,000 ppm for 6 h/day, 5 days/wk for 13 weeks), no testicular lesions were seen.
CARCINOGENICITY: Chronic exposure to commercial hexane (52% n-hexane) at a concentration of 9000ppm was not carcinogenic to rats or to male mice, but did result in an increased incidence of liver tumors in female mice. No carcinogenic effects were observed in female mice exposed to 900 or 3000 ppm hexane or in male mice. The relevance for humans of these hexane-induced mouse liver tumors is questionable.
GENETIC TOXICITY: n-Hexane caused chromosome aberrations in bone marrow of rats, but was negative in the AMES and mouse lymphoma tests.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
Gasoline studies have been conducted in the laboratory under a variety of test conditions with a range of fish and invertebrate species. An even more extensive database is available on the aquatic toxicity of individual aromatic constituents. The majority of published studies do not identify the type of gasoline evaluated, or even provide distinguishing characteristics such as aromatic content or presence of lead alkyls. As a result, comparison of results among studies using open and closed vessels, different ages and species of test animals and different gasoline types, is difficult.

The bulk of the available literature on gasoline relates to the environmental impact of monoaromatic (BTEX) and diaromatic (naphthalene, methylnaphthalenes) constituents. In general, non-oxygenated gasoline exhibits some short-term toxicity to freshwater and marine organisms, especially under closed vessel or flow-through exposure conditions in the laboratory. The components which are the most prominent in the water soluble fraction and cause aquatic toxicity, are also highly volatile and can be readily biodegraded by microorganisms.

This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

48 hour(s) LC50: 3.0 mg/l (Daphnia magna)
96 hour(s) LC50: 1.8 mg/l (Mysidopsis bahia)
96 hour(s) LC50: 8.3 mg/l (Cyprinodon variegatus)
96 hour(s) LC50: 2.7 mg/l (Oncorhynchus mykiss)

MOBILITY
No data available.

PERSISTENCE AND DEGRADABILITY
This material is expected to be readily biodegradable. Following spillage, the more volatile components of gasoline will be rapidly lost, with concurrent dissolution of these and other constituents into the water. Factors such as local environmental conditions (temperature, wind, mixing or wave action, soil type, etc), photo-oxidation, biodegradation and adsorption onto suspended sediments, can contribute to the weathering of spilled gasoline.

The aqueous solubility of non-oxygenated unleaded gasoline, based on analysis of benzene, toluene, ethylbenzene+xylenes and naphthalene, is reported to be 112 mg/l. Solubility data on individual gasoline constituents also available.

POTENTIAL TO BIOACCUMULATE
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: 2 - 7

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: UN1203, GASOLINE, 3, II; OPTIONAL DISCLOSURE: UN1203, GASOLINE, 3, II, MARINE POLLUTANT (GASOLINE)

IMO/IMDG Shipping Description: UN1203, GASOLINE, 3, II, FLASH POINT SEE SECTION 5 OR 9, MARINE POLLUTANT (GASOLINE)

ICAO/IATA Shipping Description: UN1203, GASOLINE, 3, II

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects: YES
2. Delayed (Chronic) Health Effects: YES
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Gasoline	01-2B, 07
Toluene	04, 05, 06, 07
Xylene	03, 05, 06, 07
Butane	05, 06, 07
Ethanol	01-1, 02, 04, 05, 06, 07
Benzene	01-1, 02, 03, 04, 05, 06, 07
Hexane	05, 06, 07
Heptane	05, 06, 07
Ethylbenzene	01-2B, 03, 04, 05, 06, 07
Cyclohexane	05, 06, 07
Naphthalene	01-2B, 02, 04, 05, 06, 07
Methylcyclohexane	05, 06

CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Benzene	10 lbs	None	186 lbs
Cyclohexane	1000 lbs	None	34188 lbs
Ethylbenzene	1000 lbs	None	34964 lbs
Hexane	5000 lbs	None	129149 lbs
Naphthalene	100 lbs	None	4000 lbs
Toluene	1000 lbs	None	2627 lbs
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	100 lbs	None	649 lbs

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 1 Flammability: 3 Reactivity: 0

HMIS RATINGS: Health: 2* Flammability: 3 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *-Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

Additional Product Number(s): 201023, 201054, 201055, 201075, 201090, 201105, 201106, 201120, 201121, 201122, 201126, 201128, 201131, 201136, 201141, 201142, 201148, 201153, 201158, 201161, 201162, 201168, 201175, 201181, 201185, 201186, 201188, 201216, 201217, 201218, 201236, 201237, 201238, 201266, 201267, 201268, 201277, 201278, 201279, 201286, 201287, 201289, 201296, 201297, 201298, 201849, 201850, 201855, 201856, 201857, 204000, 204001, 204002, 204003, 204010, 204011, 204022, 204023, 204046, 204047, 204070, 204071, 204088, 204089, 204104, 204105, 204116, 204117, 204140, 204141, 204164, 204165, 204188, 204189, 204200, 204201, 204207, 204212, 204213, 204224, 204225, 204248, 204249, 204272, 204273, 204290, 204291, 204322, 204323, 204324, 204350, 204352, 204354, 204356, 204358, 204359, 204364, 204365, 204370, 204371, 204376, 204377, 204382, 204383, 204388, 204389, 204394, 204395, 204400, 204401, 204406, 204407, 204412, 204413, 204418, 204419, 204424, 204425, 204430, 204431, 204436, 204437, 204442, 204446, 204450, 204454, 204458, 204462, 204466, 204467, 204484, 204485, 204502, 204503, 204520, 204521, 204538, 204539, 204556, 204557, 204574, 204575, 204592, 204593, 204610, 204611, 204628, 204629, 204646, 204647, 204664, 204665, 204682, 204690, 204691, 204696, 204697, 204702, 204703, 204708, 204709, 204721, 204722, 204727, 204728,

204739, 241765

REVISION STATEMENT: SECTION 02 - Precautionary Statements information was modified.
SECTION 03 - Composition information was added.
SECTION 03 - Composition information was modified.
SECTION 05 - Extinguishing Media information was modified.
SECTION 07 - Precautionary Measures information was modified.
SECTION 07 - Static Hazards information was modified.
SECTION 08 - Occupational Exposure Limit Table information was modified.
SECTION 09 - Physical/Chemical Properties information was modified.
SECTION 11 - Additional Toxicology Information information was modified.
SECTION 12 - Ecological Information information was modified.
SECTION 13 - Disposal Considerations information was modified.
SECTION 14 - DOT Classification information was added.
SECTION 14 - DOT Classification information was deleted.
SECTION 14 - ICAO Classification information was added.
SECTION 14 - ICAO Classification information was deleted.
SECTION 14 - IMO Classification information was added.
SECTION 14 - IMO Classification information was deleted.
SECTION 15 - Regulatory Information information was modified.

Revision Date: December 10, 2018

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Ultra-Duty Grease EP NLGI 0, 1, 2

Product Use: Industrial Grease
Product Number(s): 238011, 238012, 238013
Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency & Information Center: Located in the USA. International collect calls accepted.
(800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Acute aquatic toxicant: Category 3. Chronic aquatic toxicant: Category 3.

Environmental Hazards: Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:
Prevention: Avoid release to the environment.
Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight
Distillates (petroleum), hydrotreated middle	64742-46-7	0 - 30 %weight
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	68457-79-4	1 - < 4 %weight
Hydroxyalkyl carboxylic acid	Confidential	< 1 %weight

Phosphoric acid ester, amine salt	Mixture	< 1 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures
Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed
IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Skin contact may cause drying or defatting of the skin. Symptoms may include pain, itching, discoloration, swelling, and blistering. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.
Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed
Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Phosphorus, Sulfur, Zinc, Lithium.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Clean up spills immediately, observing precautions in Exposure Controls/Personal Protection section. Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Keep out of the reach of children.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational

exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	Form	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	--	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	--	5 mg/m3	--	--	--
Distillates (petroleum), hydrotreated middle	ACGIH	Inhalable fraction	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Red
Physical State: Semi-solid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: No data available
Vapor Density (Air = 1): No data available
Initial Boiling Point: 260°C (500°F) (Minimum)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: No data available
Melting Point: 165°C (329°F) (Minimum)
Density: No data available
Viscosity: 22 mm2/s @ 100°C (212°F) (Minimum)
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:
Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 204 °C (399 °F) (Minimum)
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: Not applicable
Hazardous Decomposition Products: Alkyl Mercaptans (Elevated temperatures), Hydrogen Sulfide (Elevated temperatures)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.
Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).
These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment.
The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY
This material is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: NOT REGULATED AS HAZARDOUS MATERIAL UNDER 49 CFR

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: Not applicable

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	05=MA RTK
01-2A=IARC Group 2A	06=NJ RTK
01-2B=IARC Group 2B	07=PA RTK
02=NTP Carcinogen	08-1=TSCA 5(e)
03=EPCRA 313	08-2=TSCA 12(b)
04=CA Proposition 65	

The following components of this material are found on the regulatory lists indicated.

Distillates (petroleum), hydrotreated middle	01-1, 02, 05, 07
Phosphorodithioic acid, mixed O,O-bis(iso-Bu and pentyl) esters, zinc salts	03, 06, 07

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AIIC (Australia), DSL (Canada), IECSC (China), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: ENCS (Japan).

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Grease)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: SECTION 01 - Product Use information was modified.
SECTION 03 - Composition information was modified.
SECTION 04 - First Aid - Skin information was modified.
SECTION 04 - Immediate Health Effects - Skin information was modified.
SECTION 05 - Special hazards arising from the substance or mixture information was modified.
SECTION 07 - Precautionary Measures information was modified.
SECTION 08 - Occupational Exposure Limit Table information was modified.
SECTION 08 - Skin Protection information was modified.
SECTION 09 - Physical/Chemical Properties information was deleted.
SECTION 09 - Physical/Chemical Properties information was modified.
SECTION 15 - Chemical Inventories information was modified.
SECTION 15 - Regulatory Information information was added.
SECTION 15 - Regulatory Information information was modified.
SECTION 16 - HMIS Rating information was modified.

Revision Date: November 15, 2021

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

SAFETY DATA SHEET

Section 1. Identification

CHS Inc.
P.O. Box 64089
Mail station 525
St. Paul, MN 55164-0089

Transportation Emergency (CHEMTREC) : **1-800-424-9300 CCN23163**
Technical Information : **1-651-355-8443**
SDS Information : **1-651-355-8445**

Product name	: AGMA/EP (All Grades)	**SDS no.**	:	0128-037639
Common name	: Lubricating Gear Oil ISO 46, 68, 100, 150, 220, 320, 460, 680.	**Revision date**	:	05/01/2018
Chemical name	: Lubricating Gear Oil.	**Chemical formula**	:	Mixture
Chemical family	: Hydrocarbon.			

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

Lubricant.

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN SENSITIZATION - Category 1

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H317 - May cause an allergic skin reaction.

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. Avoid breathing vapor. Contaminated work clothing must not be allowed out of the workplace.

Response : IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Hazardous Material Information System (U.S.A.) **Health :** 1 / **Flammability :** 1 **Physical hazards :** 0

National Fire Protection Association (U.S.A.) **Health :** 1 **Flammability :** 1 **Instability :** 0

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Chemical name : Lubricating Gear Oil.

Other means of identification : Lubricating Gear Oil ISO 46, 68, 100, 150, 220, 320, 460, 680.

Ingredient name	%	CAS number
Amines, C12-14-tert-alkyl	≤0.3	68955-53-3
(Z)-Octadec-9-Enylamine	≤0.1	112-90-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : If material comes in contact with the eyes, immediately wash the eyes with large amounts of water for 15 minutes, occasionally lifting the lower and upper lids. Get medical attention.

Inhalation : If person breathes in large amounts of material, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the person warm and at rest. Get medical attention as soon as possible.

Skin contact : If the material comes in contact with the skin, wash the contaminated skin with soap and water promptly. If the material penetrates through clothing, remove the clothing and wash the skin with soap and water promptly. If irritation persists after washing, get medical attention immediately.

Ingestion : If material has been swallowed, do not induce vomiting. Get medical attention immediately.

Most important symptoms/effects, 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 : May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following: pain or irritation, watering, redness.

Inhalation : Adverse symptoms may include the following: respiratory tract irritation, coughing.

Skin contact : Adverse symptoms may include the following: irritation, redness.

Ingestion : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

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

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use water spray to cool fire exposed surfaces and to protect personnel. Foam, dry chemical or water spray (fog) to extinguish fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Toxic fumes gases or vapors may evolve on burning.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : When fighting fires wear full turnout gear and self contained breathing apparatus. Water may cause splattering. Material floats on water.

Special protective equipment for fire-fighters : Not applicable.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Keep unnecessary and unprotected personnel from entering. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Methods and materials for containment and cleaning up

Spill : Contain with dikes or absorbent to prevent migration to sewers/streams. Take up small spill with dry chemical absorbent; large spills may require pump or vacuum prior to absorbent. May require excavation of severely contaminated soil.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.
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.
Conditions for safe storage, including any incompatibilities	:	Do not store above the following temperature: 113°C (235.4°F). Odorous and toxic fumes may form from the decomposition of this product if stored at excessive temperatures for extended periods of time. Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Appropriate engineering controls	:	Use only with adequate ventilation.
Environmental exposure controls	:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

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. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	:	Recommended: Splash goggles and a face shield, where splash hazard exists.
Skin protection		
Hand protection	:	4 - 8 hours (breakthrough time): Nitrile gloves.
Body protection	:	Recommended: Long sleeved coveralls.
Other skin protection	:	Recommended: Impervious boots.
Respiratory protection	:	If ventilation is inadequate, use a NIOSH-certified respirator with an organic vapor cartridge and P95 particulate filter.

Section 9. Physical and chemical properties

Appearance

Physical state	:	Liquid.
Color	:	Amber.
Odor	:	Mild.
Odor threshold	:	Not available.
pH	:	Not available.
Melting point	:	Not available.
Boiling point	:	Not available.
Flash point	:	Closed cup: >150°C (>302°F)
Flammability	:	Not available.
Lower and upper explosive (flammable) limits	:	Not available.

Relative density	:	0.88 to 0.89
Evaporation rate	:	<1 (Butyl acetate = 1)
Solubility	:	Insoluble in the following materials: cold water and hot water.
Solubility in water	:	Insoluble
Partition coefficient: n-octanol/water	:	Not available.
Auto-ignition temperature	:	>260°C (>500°F)
Decomposition temperature	:	Not available.
SADT	:	Not available.
Viscosity	:	Not available.
Vapor pressure	:	<0.13 kPa (<1 mm Hg) (68°F)
Vapor density	:	Not available.

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	No specific data.
Incompatible materials	:	Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Amines, C12-14-tert-alkyl	LC50 Inhalation Gas. LD50 Dermal LD50 Dermal LD50 Oral	Rat Rabbit Rat Rat	157 ppm 1120 mg/kg 251 mg/kg 300 mg/kg	4 hours - - -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Amines, C12-14-tert-alkyl	Eyes - Severe irritant Skin - Severe irritant	Rabbit Rabbit	- -	0.1 ml 0.5 ml	- -

Sensitization

Skin : Not hazardous (per manufacturer).

Respiratory : Not hazardous (per manufacturer).

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
(Z)-Octadec-9-Enylamine	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
(Z)-Octadec-9-Enylamine	Category 2	Not determined	gastrointestinal tract, immune system and liver

Aspiration hazard

Name	Result
(Z)-Octadec-9-Enylamine	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Amines, C12-14-tert-alkyl	2.9	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : There is no data available.

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

Section 13. Disposal considerations

Disposal methods : Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Section 14. Transport information

DOT IDENTIFICATION NUMBER Not applicable. **DOT proper shipping name** Not applicable.

DOT Hazard Class(es) Not applicable. **PG** Not applicable. **DOT EMER. RESPONSE GUIDE NO.** Not applicable

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR**: 2-Ethylhexyl dihydrogen phosphate; bis(2-Ethylhexyl) hydrogen phosphate
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): Not determined.

Clean Air Act Section 602 Class I Substances : Not listed
Clean Air Act Section 602 Class II Substances : Not listed
DEA List I Chemicals (Precursor Chemicals) : Not listed
DEA List II Chemicals (Essential Chemicals) : Not listed
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Hazard classifications : SKIN SENSITIZATION - Category 1

Composition/information on ingredients

Name	Classification
Amines, C12-14-tert-alkyl	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 2 SKIN CORROSION/IRRITATION - Category 1B SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SKIN SENSITIZATION - Category 1A

SARA 313 : This product (does/not) contain toxic chemicals subject to the reporting requirements of SARA Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

Product name	CAS number	%
Not applicable.		

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Distillates (petroleum), solvent-dewaxed light paraffinic; Distillates (petroleum), solvent-dewaxed heavy paraffinic; Distillates (petroleum), hydrotreated heavy paraffinic

New York : None of the components are listed.

New Jersey : The following components are listed: Distillates (petroleum), solvent-dewaxed light paraffinic; Distillates (petroleum), solvent-dewaxed heavy paraffinic; Distillates (petroleum), hydrotreated heavy paraffinic

Pennsylvania : None of the components are listed.

California Prop. 65

No products were found.

Section 16. Other information

Revision date	: 05/01/2018	**Supersedes**	: 05/07/2017
Revised Section(s)	: 1, 3, 11, 15, 16.	**Prepared by**	: KMK Regulatory Services Inc.

Notice to reader

THE INFORMATION CONTAINED IN THIS SDS RELATES ONLY TO THE SPECIFIC MATERIAL IDENTIFIED. IT DOES NOT COVER USE OF THAT MATERIAL IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY PARTICULAR PROCESS. IN COMPLIANCE WITH 29 C.F.R. 1910.1200(g), CHS HAS PREPARED THIS SDS IN SEGMENTS, WITH THE INTENT THAT THOSE SEGMENTS BE READ TOGETHER AS A WHOLE WITHOUT TEXTUAL OMISSIONS OR ALTERATIONS. CHS BELIEVES THE INFORMATION CONTAINED HEREIN TO BE ACCURATE, BUT MAKES NO REPRESENTATION, GUARANTEE, OR WARRANTY, EXPRESS OR IMPLIED, ABOUT THE ACCURACY, RELIABILITY, OR COMPLETENESS OF THE INFORMATION OR ABOUT THE FITNESS OF CONTENTS HEREIN FOR EITHER GENERAL OR PARTICULAR PURPOSES. PERSONS REVIEWING THIS SDS SHOULD MAKE THEIR OWN DETERMINATION AS TO THE MATERIAL'S SUITABILITY AND COMPLETENESS FOR USE IN THEIR PARTICULAR APPLICATIONS.

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OUR ENERGY COMES THROUGH®

A BRAND OF CHS®

OaRetS Data O4eet

OUI MYWN F dRWDcI MAND I W(dAN) YDUNMpY AMYWN

I 4evron 0 SErau15 Wi1A- f yhCThTI

droEu5t c se: Hydraulic Oil
droEu5t Numbergs H 255673, 255674, 255675, 293130, 293131, 293132
OSnonSms: Chevron Hydraulic Oil AW 32 ISOCLEAN Certified; Chevron Hydraulic Oil AW 46 ISOCLEAN Certified; Chevron Hydraulic Oil AW 68 ISOCLEAN Certified
I om2anS YEentiR5ation
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Mrans2ortation UmerZen5S Res2onse
CHEMTREC: (800) 424-9300 or (703) 527-3887
0 ea1t4 UmerZen5S
Chevron Emergency & Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
droEu5t YnRormation
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

OUI MYWN y 0 ALARDO YDUNMpY AMYWN

I 3AOOYpY AMYWN:
Not classified as hazardous according to 29 CFR 1910.1200 (2012).

0 ALARDO NWMWWD UR- YOU I 3AOOYpYUD: Not Applicable

OUI MYWN f I W(dWOYMYWN/ YNpWR(AMYWN WN YNGRUDYUNMD

I W(dWNUNMD	I AO Nc(BUR	A(Wc NM
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

OUI MYWN C pYROMAYD (UAOc RUO

Des5ri2tion oPRrst aiE measures
USe: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Okin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

YnZestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Yn4a1ation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

(ost im2ortant sSm2toms anE eRe5tshbot4 a5ute anE Ee1aSeE
Y((UDYAMU 0UA3MD UppUI MD
USe: Not expected to cause prolonged or significant eye irritation.
Okin: High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.
Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.
YnZestion: Not expected to be harmful if swallowed.
Yn4a1ation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DU3A) UD WR WMD UR 0UA3MD UppUI MD: Not classified

YnEi5ation oPanS immeEiate meEi5a1attention anE s2e5ia1treatment neeEeE
Note to d4Ssi5ians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

OUI MWN , pYRU pYG0 MNG (UAOc RUO

UXMNGc YO0 YNG (UDYA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.
c nusua1pire 0a6arEs: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

dRWMUI MWN Wp pYRU pYG0 MURO:
pire piZ4tinZ Ynstru5tions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
I ombustion droEu5ts: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

OUI MWN T AI I YDUNMA3 RU3UAOU (UAOc RUO

drote5tive (easures: Eliminate all sources of ignition in vicinity of spilled material.
O2i11(anaZement: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Re2ortinZ: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

OUI MXWN 7 0AND3YNG AND OMWRAGU

Genera10anE1nZ YhRormation: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
dre5autionarS(easures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.
Otati5 0a6arE: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
I ontainer - arninZs: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

OUI MXWN I UXdWOc RU I WNMRW3O/dUROWNA3 dRWMUI MXWN

GUNURA3 I WNOYDURAMXWNO:
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the workplace when designing engineering controls and selecting personal protective equipment (PPE). If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, refer to PPE information below.

Factors that affect PPE include, but are not limited to: properties of the chemical, other chemicals which may contact the same PPE, physical requirements (fit & sizing, cut/puncture protection, dexterity, thermal protection, etc.), and potential allergic reactions to the PPE material. It is the responsibility of the user to read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances. Refer to appropriate CEN standards.

UNGYNUURYNG I WNMRW3O:
Use in a well-ventilated area.

dUROWNA3 dRWMUI MŽ U U8cYd(UNM
USe/pa5e drote5tion: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.
Okin drote5tion: Wear chemical personal protective equipment (PPE) to prevent skin contact. Selection of chemical protective clothing should be performed by an Occupational Hygienist or Safety Professional and be based upon applicable standards (ASTM F739 or EN 374). Using chemical PPE depends upon operations conducted and may include chemical gloves, boots, chemical apron, chemical suit, and complete facial protection. Refer to PPE manufacturers to obtain breakthrough time information to determine how long PPE can be used before it needs to be replaced. Unless specific glove manufacturer data indicates otherwise, the below table is based upon available industry data to assist in the glove selection process and is intended to be used as reference only.

I 4emi5a1G1ove (ateria1	M4i5kness gmmH	MS2i5a1Breakt4rouZ4 Mme gminutesH

Butyl	0.7	120
Nitrile	0.8	240
Viton Butyl	0.3	240

Res2iratorS drote5tion: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

W55u2ationa1UV2osure 3imits:

l om2onent	AZen5S	porm	M- A	OMU3	l ei1nZ	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	--	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	--	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

OUI MWN Q d0) OY A3 AND I 0U(Y A3 dRWdURMUO

Attention: t4e Eata be1ox are tS2i5a1va1ues anE Eo not 5onstitute a s2e5iR5ation9

l o1or: Amber
d4Ssi5a1Otate: Liquid
WEor: Petroleum odor
WEor M4res4o1E: No data available
20: Not Applicable
z a2or dressure: No data available
z a2or DensitS gAir wFH No data available
Yhitia1Boi1nZ doint: No data available
Oo1ubi1tS: Soluble in hydrocarbon solvents; insoluble in water.
pree6inZ doint: Not Applicable
(e1tinZ doint: No data available
DensitS: 0.8655 kg/l - 0.8811 kg/l @ 15°C (59°F) (Typical)
z is5ositS: 28.80 mm2/s - 68 mm2/s @ 40°C (104°F)
l oeRR5ient oPM4erm9UV2ansion / .p: No data available
Uva2oration Rate: No data available
De5om2osition tem2erature: No data available
W5tano1- ater dartition l oeRR5ient: No data available

p3A((AB3U dRWdURMUO:
p1ammabi1tS gso1EhZasH Not Applicable

p1as42oint: (Cleveland Open Cup) 170 °C (338 °F) (Minimum)
AutoiZnition: No data available
p1ammabi1tS gJV21bsiveH3imits g= bS vo1ume in airH Lower: Not Applicable Upper: Not Applicable

OUI MWN F° OMABY8YM) AND RUAI Mz YM)

Rea5tivitS: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

I 4emi5a1Otabi1itS: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Yn5om2atibi1itS - it4 Wt4er (ateria1s: Not applicable
0a6arEous De5om2osition droEu5ts: None known (None expected)
0a6arEous do1Smeri6ation: Hazardous polymerization will not occur.

OUI MWN FF MWXY W3WGY A3 YNpWR(AMWN

YnRormation on toVi5o1oZi5a1eRe5ts
Oerious USe DamaZe/Yritation: The material is not considered an eye irritant. The product has not been tested. The statement is based on evaluation of data for product components.

Okin I orrosion/Yritation: The material is not considered a skin irritant. The product has not been tested. The statement is based on evaluation of data for product components.

Okin Oensiti6ation: The material is not considered a skin sensitizer. The product has not been tested. The statement is based on evaluation of data for product components.

A5ute Derma1MbVi5itS: The material is not considered a dermal toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

A5ute Wra1MbVi5itS: The material is not considered an oral toxicant. The product has not been tested. The statement is based on evaluation of data for product components.

A5ute Yn4a1ation MbVi5itS: The material is not considered an inhalation toxicant. The product has not been tested. The statement is based on evaluation of data for product components.
A5ute MbVi5itS Ustimate: Not Determined

Germ I e11(utaZeni5itS: The material is not considered a mutagen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

I ar5inoZeni5itS: The material is not considered a carcinogen. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

Re2roEu5tive MbVi5itS: The material is not considered a reproductive toxicant. The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

O2e5iR5 MarZet WrZan MbVi5itS %OinZ1e UV2osure: The material is not considered a target organ toxicant (single exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

O2e5iR5 MarZet WrZan MbVi5itS %Re2eateE UV2osure: The material is not considered a target organ toxicant (repeated exposure). The product has not been tested. The statement is based on evaluation of data for similar materials or product components.

As2iration 0a6arE: The material is not considered an aspiration hazard.

ADDYWWNA3 MWXY W3WG) YNpWR(AMWN:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).
These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

OUI MWN Fy UI W3WGY A3 YNpWR(AMWN

UI WMWXY YM)
This material is not expected to be harmful to aquatic organisms.
The product has not been tested. The statement has been derived from the properties of the individual components.

(WBY3YM)
No data available.

dUROYOMUNI U AND DUGRADABY3YM)
This material is not expected to be readily biodegradable. The product has not been tested. The statement has been derived from the properties of the individual components.

dWMUNMA3 MWBYWAI I c(c3AMU
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

OUI MWN Ff DYOdWOA3 I WNOYDURAMWNO

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

OUI MWN FC MRANOdWRMYNpWR(AMWN

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DWMO4i22inZ Des5ri2tion: NOT REGULATED AS HAZARDOUS MATERIAL UNDER 49 CFR

Y(WY(DG O4i22inZ Des5ri2tion: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

Y AWYAMA O4i22inZ Des5ri2tion: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

Mrans2ort in bu1k a55orEinZ to AnneV YoP(ARdW3 7f /7I anE t4e YBI 5oEe:
Not applicable

OUI MWN F, RUGc3AMWR) YNpWR(AMWN

UdI RA f FF/f Fy I AMJGWRYJO: Not applicable

RUGc3AMWR) 3YOMD OUARI 0UD:

01-1=IARC Group 1	05=MA RTK
01-2A=IARC Group 2A	06=NJ RTK
01-2B=IARC Group 2B	07=PA RTK
02=NTP Carcinogen	08-1=TSCA 5(e)

03=EPCRA 313 08-2=TSCA 12(b)

04=CA Proposition 65

No components of this material were found on the regulatory lists above.

I 0U(Y A3 YNz UNMWRYJO:
All components comply with the following chemical inventory requirements: AIIC (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States).

NU- JUROU) RMK I 3AOOYpY AMWN:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Hydraulic oil)

OUI MWN FT WMDUR YNpWR(AMWN

NpdA RAMNGO: Health: 0 Flammability: 1 Reactivity: 0

0(YO RAMNGO: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

RUz YOYWN OMAMU(UNM SECTION 04 - Delayed Health Effects - Target Organ(s) information was modified.
SECTION 08 - Eye/Face Protection information was modified.
SECTION 08 - General Considerations information was modified.
SECTION 08 - Personal Protective Equipment List information was deleted.
SECTION 08 - Personal Protective Equipment information was added.
SECTION 08 - Skin Protection information was modified.
SECTION 09 - Physical/Chemical Properties information was modified.
SECTION 11 - Carcinogenicity information was added.
SECTION 11 - Germ Cell Mutagenicity information was added.
SECTION 11 - Reproductive Toxicity information was added.
SECTION 11 - Specific Target Organ Toxicity - Repeated Exposure information was added.
SECTION 11 - Specific Target Organ Toxicity - Single Exposure information was added.
SECTION 11 - Toxicological Information information was added.
SECTION 11 - Toxicological Information information was modified.

Revision Date: July 22, 2022

ABBRUz YAMWNO MDAM(A) 0Az U BUUN c OUD YN MDYO DWM c(UNM

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Technical Center, 6001 Bollinger Canyon Road, San Ramon, CA 94583.

M4e above inRormation is baseE on t4e Eata oPx 4i54 x e are ax are anE is be1eveE to be 5orre5t as oP t4e Eate 4ereoP9 Oin5e t4is inRormation maS be a221eE unEer 5onEitions beSonE our 5ontro1 anE x it4 x 4i54 x e maS be unRami1ar anE sin5e Eata maEe avai1ab1e subsequent to t4e Eate 4ereoP maS suZZest moEiR5ations oPt4e inRormationhx e Eo not assume anS res2onsibi1tS Ror t4e resu1ts oP its use9 M4is inRormation is Rurnis4eE u2on 5onEition t4at t4e 2erson re5eivinZ it s4a11 make 4is ox n Eetermination oPt4e suitabi1tS oPt4e materia1 Ror 4is 2arti5u1ar 2ur2ose9

Safety Data Sheet
POLY-PLUS† RD

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name POLY-PLUS† RD
Product code MI11076

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

Recommended Use Drilling fluid additive.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I Australia Pty Ltd
Level 5
256 St. George Terrace
Perth
WA 6000
T= 08 9440 2900
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to (EC) No. 1272/2008

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
None

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

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

Indication of danger
Not classified

Contains

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

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

3.2 Mixtures

Not Applicable

4. First aid measures

4.1 First-Aid Measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.
Eye contact	Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
When heated strongly or burned, oxides of carbon, nitrogen oxides, ammonia and harmful organic chemical fumes are released.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment.

6.3 Methods and materials for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Oxidizing agents Protect from moisture
Storage class	Chemical storage.
Packaging material	Use specially constructed containers only

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits	NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust. No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.
Hand protection	Repeated or prolonged contact:, Use protective gloves made of:, Nitrile, Neoprene.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment, Suitable mask with particle filter P3 (European Norm 143), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Granules
Odor	Odorless
Color	White
Odor threshold	Not applicable

Property	Values	Remarks
pH	Not applicable	
pH @ dilution	7.7	@ 1% sol.
Melting/freezing point		
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate (BuAc =1)		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	

Vapor pressure	No information available
Vapor density	No information available
Specific gravity	1.25 – 1.40 @ 20 °C
Bulk density	641 – 737 kg/m³ (40 – 46 lb/ft2)
Relative density	No information available
Water solubility	Soluble in water
Solubility in other solvents	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	
Dynamic viscosity	No information available
Log Pow	Not determined

Explosive properties	Not Applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Protect from moisture. Heat.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.

Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.

Sensitization	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.

Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	None known.
Routes of entry	No route of entry noted.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.
EWC Waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 99.

14. Transport information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA,ADR/RID/ADG).

14.1 UN Number
Not regulated

14.2 Proper shipping name
Not regulated

14.3 Hazard class(es)

ADR/RID/ADN Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

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

Germany, Water Endangering Classes (VwVwS)	Water endangering class = 2

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No Poisons Schedule number allocated

New Zealand hazard classification	Not classified.
HSNO approval no.	Not required.
Group number	Not required.

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International inventories

USA (TSCA)	Complies
European Union (EINECS and ELINCS)	Complies
Canada (DSL)	Does not Comply
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes date	22/Apr/2014
Revision date	30/Mar/2015
Version	6
The following sections have been revised	1,, 2,, 3,, 8,, 11,, 12,, 16, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 2 and 3
Not classified

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

This product is not classified as hazardous therefore no (H) hazard statements assigned.

†A mark of M-I L.L.C.

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

CPD
Construction Products

SDS-207
Revised October 8th, 2017

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

PRODUCT NAME: CPD SUPERPLUG

MANUFACTURER/SUPPLIER:	CPD Construction Products 219 Connie Crescent, Unit #13 Concord, Ontario Canada L4K 1L4
24 HOUR EMERGENCY NUMBER:	CANUTEC: (613) 996-6666
APPLICATION AND USE:	Water plug and fast setting patching compound.
PRODUCT DESCRIPTION:	Blend of Hydraulic Cements and Silica Aggregate.

SECTION 2: HAZARDS INDENTIFICATION

GHS CLASSIFICATION ..... Skin irritation (Category 2); Serious eye damage (Category 1); Carcinogenicity (Category 1A-Inhalation); Specific target organ systemic toxicity-single exposure (Category 3- Respiratory system); Specific target organ systemic toxicity-repeated exposure (Category 1-Lungs)

SIGNAL WORD ..... **DANGER**

HAZARD STATEMENTS .....
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer by inhalation.
H372 Causes damage to organs (Lungs) through prolonged or repeated exposure.

PRECAUTIONARY STATEMENTS

PREVENTION .....
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breath dust.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/face protection.
P281 Use personal protective equipment as required.

RESPONSE .....
P302+P352 IF ON SKIN: wash with plenty of soap and water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/ attention.
P310 Immediately call a POISON CENTER/ doctor.
P332+P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	%	C.AS. #	LD/50, Route, Species	LC/50, Route, Species
Silica Sand ** (Quartz)	30-60	14808-60-7	>5,000 mg/ Kg (Oral-Rat)	Not Available
Portland Cement (Hydraulic Cement)	30-60	65997-15-1	Not Available	Not Available

**The sand used in this product contains approximately 85% (by weight) Quartz. The Quartz that exists as dust particles, with aerodynamic diameter less than 5 microns, is hazardous. An approved dust mask (for crystalline silica) should be worn by workers handling this product in the dry state.

SAFETY DATA SHEET

SECTION 4 : FIRST-AID MEASURES

FIRST-AID MEASURES

EYE CONTACT ……..	Flush eyes with lukewarm water for at least 15 minutes holding eye lids open. If irritation persists see a physician.
SKIN CONTACT ……	Wash with soap and water and remove contaminated clothing. Wash clothing separately prior to reuse. If irritation persists, get medical attention.
INHALATION ……	Remove victim to fresh air. Consult a physician after significant exposure.
INGESTION ……	If swallowed, **DO NOT** induce vomiting. Rinse mouth and call a physician or poison control centre immediately. Never give anything by mouth to an unconscious person. Obtain medical attention.

SYMPTOMS AND EFFECTS

EYE CONTACT ……..	Mild irritation and discomfort, may cause excessive lachrymation or serious eye damage.
SKIN CONTACT ……..	Irritation may occur. Prolonged or repeated contact may result in skin sensitization and dermatitis.
INHALATION ……	Prolonged inhalation may result in respiratory irritation, coughing. May cause cancer by inhalation.
CHRONIC ……	May cause damage to organs through prolonged or repeated exposure.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABILITY CLASSIFICATION …….	Not flammable or combustible.
SENSITIVITY OF STATIC DISCHARGE…….	Not applicable.
EXTINGUISHING MEDIA ……..……	This product will not burn. Use the medium appropriate to the surrounding fire.
SPECIAL FIRE FIGHTING PROCEDURES……..	Wear self-contained breathing apparatus and protective clothing if necessary Use self-contained breathing apparatus and protective clothing for large fires.
HAZARDOUS COMBUSTION PRODUCTS ……	None.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS ……...	Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.
ENVIRONMENTAL PRECAUTIONS …….	Do not let product enter drains. Do not flush into surface water or sanitary sewer system.
CLEAN-UP METHODS ……	Pick-up and arrange disposal without creating dust. Sweep up and shovel using dust retarding floor sweeping compound. Keep in closed containers for disposal.

SECTION 7: HANDLING AND STORAGE

HANDLING PROCEDURES …….....	Avoid contact with skin and eyes. Avoid formation of dust and dust inhalation. Provide appropriate exhaust ventilation in places where dust is formed
STORAGE NEEDS ……...	Store in original labelled container, tightly closed and in a dry, well-ventilated place.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS (respirable fraction in air):

SILICA SAND (QUARTZ) ……...	OSHA & MSHA-PEL	10 mg/m³ (8 hour TWA)
	ACGIH-TLV	0.05 mg/m³ (8 hour TWA)
	NIOSH	0.05 mg/m³ (10 hour TWA, 40 h work week)
PORTLAND CEMENT ……	OSHA- PEL, ACGIH-TLV, NIOSH	5 mg/m³ (TWA)

PROTECTIVE EQUIPMENT:

EYE / TYPE ……..	Safety eyewear should be used when a risk assessment indicates as necessary.
RESPIRATORY PROTECTION ……	Avoid breathing dust. For operations where inhalation exposure can occur, a NIOSH approved respirator may be necessary.
SKIN/ BODY PROTECTION ……..	Wear protective clothes; long sleeves and trousers to prevent dermal exposure.
OTHER / TYPE ……	Eyewash fountain. Emergency shower should be in close proximity.
VENTILATION REQUIREMENTS ……	General dilution and local exhaust as necessary to control airborne dusts below appropriate airborne concentration standards/guidelines.

SAFETY DATA SHEET

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Powder /Granular Solid
VAPOUR PRESSURE	Not applicable
VISCOSITY	Not applicable
VAPOUR DENSITY (AIR=1).....	Not applicable
SPECIFIC GRAVITY @20°C (68°F)	2.2
BOILING POINT	Not applicable
SOLUBILITY IN WATER	<3.0%
APPEARANCE.....	Dark Grey Powder containing fine Silica Sand
ODOUR	None
pH LEVEL	12.5 @ 20°C (68°F) (Aqueous Solution)
% VOLATILE	Not applicable
EVAPORATION RATE (N-BuAc=1)	Not applicable

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY	Product is stable.
POSSIBLE HAZARDOUS REACTIONS	Hazardous polymerization will not occur under normal storage conditions.
CONDITIONS TO AVOID	Do not allow the product to get wet as it will harden. Store in a dry place.
INCOMPATIBLE MATERIALS	No data available.
HAZARDOUS DECOMPOSITION PRODUCTS:	Product is stable, hazardous decomposition will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

INGREDIENTS LD50/ LC50 DATA	Refer to Page 1 Section 3.
ROUTES OF EXPOSURE:	
EYE CONTACT	Irritating.
SKIN CONTACT	Frequent or prolonged contact may irritate the skin, low toxicity.
INHALATION (ACUTE)	Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals. Respirable Silica Quartz can cause chronic silicosis.
CARCINOGENICITY OF MATERIAL	May cause cancer by inhalation. The Silica Quartz component is classified as carcinogenic to humans by NTP and IARC-Group 1.
TERATOGENICITY	No data available.
MUTAGENICITY.....	No data available.
REPRODUCTIVE EFFECTS	No data available.
OTHER	The dust product may be harmful if inhaled. Causes respiratory tract irritation. Prolonged exposure can cause silicosis. May be harmful if swallowed. Causes skin and eye irritation.
SIGNS AND SYMPTOMS OF EXPOSURE	Coughing, skin rash, allergic dermatitis.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY.....	No data available.
PERSISTENCE AND DEGRADABILITY	No data available.
BIOACCUMULATIVE POTENTIAL	No data available.
MOBILITY IN THE SOIL	No data available.
OTHER EFFECTS	No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

PRODUCT DISPOSAL	Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation in place. Do not allow product to enter sewers, streams or lakes.
WASTE DISPOSAL	Empty containers of this product can be disposed of as normal garbage.

SECTION 14: TRANSPORTATION INFORMATION

TDG CLASSIFICATION	Not regulated.

SAFETY DATA SHEET	Page 4

SECTION 15: REGULATORY INFORMATION

WHMIS CLASSIFICATION	Class E (Portland Cement) Class D Division 2 Subdivision A (Silica Quartz)
CPR (CANADA) COMPLIANCE	Meets all requirements.

SECTION 16: OTHER INFORMATION

ACGIH	American Confederation of Governmental Industrial Hygienists
IARC.....	International Agency for Research on Cancer
NTP.....	National Toxicology Program
STEL	Short Term Exposure Limit
PEL	Permissible Exposure Limit
TLV-TWA	Threshold Limit Value - Time-Weighted Average
OSHA	Occupational Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
MSHA	Mine Safety and Health Administration
CPR	Controlled Products Regulations
CAS	Chemical Abstracts Service
PPE	Personal Protection Equipment
N/Av	Not available

PREPARED BY:	Camelia Gardo
TELEPHONE NUMBER:	(905) 669-5013
PREPARATION DATE:	October 8th, 2017

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

Attachment B:
Spill Reporting Form

MILLENNIAL
PRECIOUS METALS

Release/Spill Reporting Form

Release/Spill Date:	Report Date:
Release/Spill Time:	Report Time:

Person Reporting the Release/Spill: Anonymous? Yes: ☐

Name:

Company:

Phone:

Email:

Release/Spill Location:

Project or Facility Name:

Facility Address:		State:	Zip:
Project Location:	Latitude:	Longitude:	
	UTM Northing:	UTM Easting:	
Township:	Range:	Section:	

Release/Spill Information:

Type of material released/spilled (e.g, petroleum, acid, sewage, etc):

Estimated volume of material released/spilled (gallons, liters, etc.)

Environmental media impacted (soil, surface water, groundwater, etc)

Estimated volume or extent of impacted media (cubic yards or square ft):

Cause of the release/spill (provide an explanation of what happened):

Remedial Action Taken:

Comments/Additional information:

Please include multiple photographs of the release/spill to attach to this report.

Email the completed form and photographs to benjamin.peterson@millennialpm.com.

Millennial Precious Metals Environmental Manager: Benjamin Peterson, 1-775-433-4099
Nevada Division of Environmental Protection Spill Reporting Hotline: 1-888-331-6337

Appendix D:

Bird and Bat Conservation Strategy

Bird and Bat Conservation Strategy

for the

MOUNTAIN VIEW PROJECT

MILLENNIAL NV, LLC

December 2025

Prepared for:

Millennial NV, LLC

Reno, NV

Prepared by:

CEDAR CREEK ASSOCIATES, INC.

PO Box 272150
Fort Collins, Colorado 80527
(303) 818-1978

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ACRONYMS AND ABBREVIATIONS

AML	Abandoned Mine Land
BBCS	Bird and Bat Conservation Strategy
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practices
CCS	Conservation Credit System
Cedar Creek	Cedar Creek Associates, Inc.
CFR	Code of Federal Regulations
dBA	A-weighted decibels
dBC	C-weighted decibels
dBZ	Z-weighted decibels
EPM	Environmental Protection Measure
ESA	Endangered Species Act
°F	Degrees Fahrenheit
GSRG	Greater Sage-Grouse
L90	Residual sound level
Leq	Equivalent Sound Level
MBTA	Migratory Bird Treaty Act
MNV	Millennial NV LLC
MOU	Memorandum of Understanding
Mtn.	Mountain
NDEP	Nevada Division of Environmental Protection
NDOM	Nevada Division of Minerals
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NNHP	Nevada Natural Heritage Program
NRS	Nevada Revised Statutes
NVMA	Nevada Mining Association
Project	Mountain View Project
US	United States
USC	United States Code

USFWS	United States Fish and Wildlife Service
WRC	Wildlife Resources Consultants, LLC
WRCC	Western Regional Climate Center

1.0 INTRODUCTION

Millennial NV LLC (MNV) proposes an exploration drilling and baseline data collection program known as the Mountain (Mtn.) View Project (Project). The Project is located in Washoe County, Nevada on the western slope of the Granite Mountain Range as shown in Figure 1-1.

A Bird and Bat Conservation Strategy (BBCS) is a project-specific plan that is recommended by the U.S. Fish and Wildlife Service (USFWS) for all projects that may impact bird and bat species. The purpose of the BBCS is to document the conservation measures that may be implemented to reduce and avoid impacts to birds and bats. The BBCS also outlines a standardized approach to monitoring for avian and bat fatalities that will be used during all phases of the Project. This BBCS describes general bird and bat conservation strategies for all protected species. Note that protection measures for Greater sage-grouse (GRSG) is described in this document; however, specific mitigation measures addressing GRSG habitat is described separately in the Project's Conservation Credit System (CCS) program.

1.1 Objectives and Regulatory Framework

Development of this BBCS incorporated the goals and objectives of established federal and state laws and policies for protection of birds and bats, including: the Migratory Bird Treaty Act (MBTA; [16 USC §§ 703-712]), which is administered by USFWS, and is the cornerstone of migratory bird conservation and protection in the United States; the Endangered Species Act (ESA); [16 USC §§ 1531-1544]), administered by USFWS and the Commerce Department's National Marine Fisheries Service; the Bald and Golden Eagle Protection Act of 1940 (BGEPA), as amended (16 USC §§ 668-668c); Bureau of Land Management (BLM) policies, including but not limited to BLM sensitive species policy (BLM 2008), and Memorandum of Understanding (MOU) with the USFWS that promotes the conservation of migratory bird populations (BLM 2010); and state regulations, including Title 45 of Nevada Revised Statutes (NRS) (NRS 501.100 through 503.104), and NRS 503.584 through 503.589. With this regulatory framework in mind, the implementation of this BBCS will contribute to the achievement of the principal goal of reducing impacts to birds and bats and fulfill multiple goals as follows:

- Reduce the potential for avian and bat injury or mortality and avoid the potential for take by implementing protection measures and best management practices (BMPs);

- Identify and isolate where avian and bat mortality has occurred or has the potential to occur to minimize future incidents;
- Establish an avian and bat reporting system to document incidents of mortality resulting from project-related features; and
- Assist MNV in compliance with state and federal laws regarding avian and bat species to avoid penalties and fines.

1.2 Project Location and Description

The Project is located on public lands administered by the BLM in Washoe County, Nevada (Figure 1-1). The Project area is in all or part of Sections 5 through 9 and 16 through 21, Township 34 North, Range 22 East (T34N, R22E). The 3,425-acre Project area can be accessed directly from Nevada State Route (SR) 447, about 13 miles north of Gerlach, Nevada.

The Project would entail exploration drilling and baseline data collection activities within the Project area. The activities would generally consist of operation of up to 10 small, constructed exploration sites at a time. Activities as each site will generally be performed by up to 3 drilling contractors. Additionally, up to 5 MNV staff will be within the Project area at any given time. Exploration and baseline collection activities would occur for a period of up to 10 years.

2.0 EXISTING CONDITIONS

The Project is west of the Granite Mountain range, with elevations ranging between approximately 4,500 and 5,800 feet above mean sea level. Gradients are steepest along the foothills on the east side of the survey area are steep, ranging from 1 to 1.4 ft/ft, becoming more gradual to the west, averaging about 0.15 ft/ft.

Present land use in the survey area includes livestock grazing and exploration drilling activities. There are unimproved dirt roads throughout the survey area. Infrastructure from past mining activities is present on the site in the form of debris and stockpiles. There is a 345-kilovolt (kV) powerline that runs parallel to SR 447 in the western area of the Project.

Climate data reported for Gerlach between 1971 and 2000 (WRCC 2023; station #262662) shows and annual average total precipitation of 5.75 inches. Average annual temperatures during this period ranged from 36.4 degrees Fahrenheit (°F) to 66.9 °F. Historical data was not reported for this station after this time period. Climate data for the next closest station in Fernley, Nevada (station #262840), about 100 miles south of the Project, reports similar precipitation and temperature records over this same time period (8.44 inches of precipitation, and temperatures ranging between 37.6 and 67.7°F). In 2022, average precipitation records were below average, with 1.99 inches total precipitation for the year, with record lows of zero precipitation in January.

Vegetation cover in the Project area consists mostly of Inter-Mountain Basins Big Sagebrush Shrubland. Great Basin Pinyon-Juniper Woodlands occur at higher elevations and Great Basin Xeric Mixed Sagebrush Shrublands are interspersed along the cliff and canyon habitats. At lower elevations along the west side of the survey area, salt desert scrub and greasewood communities are more frequent. In June 2006, a large wildfire occurred along the northern half of the survey area. Vegetation communities within the burn area have transitioned to a mosaic of seeded grasslands, shrub and kochia dominated forblands, and invasive annual grasslands.

2.1 Species of Interest

In this BBCS, the term "protected species" encompasses all avian and bat species that are protected by any one or more of the laws, policies, or regulations described in Section 1.1 of this document. Specifically, this includes:

- All avian and bat species that are listed as threatened or endangered species or are proposed or candidates for listing under the ESA of 1973 as amended;
- All avian species extended protection under the MBTA and BGEPA;
- All avian or bat species that the State of Nevada extends protection to through Nevada Revised Statutes (NRS) 501.100–503.104, NRS 527.050, and/or NRS 527.60–527.300; and,
- All species identified as BLM sensitive species in Nevada (IM-NV-2018-003).

2.2 Baseline Surveys

2.2.1 Birds

Baseline surveys for cliff and tree dwelling raptors, burrowing owls, Greater sage-grouse, and migratory birds were completed in 2022 in support of Project permitting needs. Below are summaries of data presented in Cedar Creek (2022) and WRC (2022a, 2022b).

Migratory Birds

Thirty-one (31) species of migratory birds (including several incidental observations of raptors) were observed in the Project area during baseline surveys in 2022 (Table 2-1). Observed birds (other than raptors) that are BLM special status species included the Brewer's sparrow.

Raptors

Raptor nest surveys were conducted in the Project area and in a 2-mile buffer of the Project area in 2022. There were 13 golden eagle nests identified in the survey area, none of which were in the Project area (see Appendix A for a raptor nest species map). Five of the golden eagle nests (Table 2-2) are within a 1-mile buffer of the Project boundary and the remaining golden eagle nests are >1 mile from the Project. Of the golden eagle nests observed within a mile of the Project boundary, 1 nest was occupied by golden eagles (nest 3B), 2 nests were unoccupied (3A and 15), and the remaining two golden eagle nests were occupied by other raptors (a red-tailed hawk and a prairie falcon). Four active golden eagle territories were estimated based on nest occupancy observations; Territories 1 and 2 overlap the Project boundary, corresponding to active nests 7A (Territory 1) and 3B (Territory 2).

Other raptor species observed in the Project area during migratory bird and raptor surveys included Ferruginous hawks, Prairie falcons, Great horned owls, Red-tailed hawks, and

Turkey vultures. Common ravens, though not a raptor species, were observed occupying some small stick nests during the raptor surveys. Table 2-2 lists raptor nest information for all nests observed in and within 1-mile of the Project boundary in 2022. One burrowing owl was incidentally observed in late June 2022, but no nests or other burrowing owl activity were found in the Project area during nest surveys throughout the breeding and nesting season for the species (Cedar Creek 2022).

Greater Sage-Grouse

The Project area is almost entirely within priority management habitat for Greater sage-grouse, based on BLM habitat management mapping for the species. A small area in the lower southeast corner is mapped as Other management habitat. Ground-based observations indicate that nearly 90% of the Project area mapped as Priority management habitat contains degraded and/or otherwise less suitable habitat for Greater sage-grouse.

NDOW records indicate there are 7 Greater sage-grouse leks within 4 miles of the Project area. The status of all of the leks is unknown, pending or historic. Lek surveys conducted during lekking season in 2022 observed two of the leks to be active (Cottonwood Upper and Banjo 1), and a third lek (Granite East) was presumed active based on secondary sign.

Noise baseline surveys were completed in and around the Project area to determine current noise levels near leks and for the Project area in general (Saxelby 2022). All noise baseline data was corrected for noise floor and tabulated as summarized in Table 2-3. Twenty-four-hour average noise levels (Equivalent Sound Level, Leq) ranged from 33.1 dBA near Banjo 1 (about 3.8 miles east of the Project area), to 36.4 dBA near Cottonwood Upper (about 3.3 miles east of the Project area). Twenty-four-hour residual noise levels (L90, meaning the sound level that occurred for at least 90 percent of each hour monitored) were less than 21 dBA at all monitoring sites, with the lowest recorded L90 noise level at 17 dBA near Banjo 1. Other noise level weightings are also shown in Table 2-3, which are more pertinent to other wildlife species.

Table 2-1. Migratory Birds and Raptors Observed in the Project Area

Species	Common Name
Alectoris chukar	Chukar
Amphispiza bilineata	Black-throated Sparrow
Artemisiospiza nevadensis	Sagebrush Sparrow

Species	Common Name
Anser caerulescens	Snow Goose
Aquila chrysaetos	Golden Eagle
Athene cunicularia	Burrowing owl
Branta canadensis	Canada Goose
Bubo virginianus	Great horned owl
Buteo jamaicensis	Red-tailed Hawk
Buteo regalis	Swainson's Hawk
Chondestes grammacus	Lark Sparrow
Calidris bairdii	Baird's Sandpiper
Cathartes aura	Turkey Vulture
Colaptes auratus	Northern Flicker
Corvus corax	Common Raven
Empidonax oberholseri	Dusky Flycatcher
Eremophila alpestris	Horned Lark
Falco mexicanus	Prairie Falcon
Numenius americanus	Long-billed Curlew
Onychoprion anaethetus	Bridled Tern
Peucaea botterii	Botteri's Sparrow
Poecile gambeli	Mountain Chickadee
Salpinctes obsoletus	Rock Wren
Sialia currucoides	Mountain Bluebird
Spindalis zena	Western Spindalis
Spizella breweri	Brewer's Sparrow
Spizella passerina	Chipping Sparrow
Sturnella neglecta	Western Meadowlark
Turdus migratorius	American Robin
Zenaida macroura	Mourning Dove
Zonotrichia leucophrys	White-crowned Sparrow
Total Species:	**31**

Sources: Cedar Creek (2022), WRC (2022a)

Table 2-2. Golden Eagle and Other Raptor Nests Surveyed in 2022

Nest Type	Nest ID	Status
Golden eagle	3A	Unoccupied
Golden eagle	3B	Occupied
Golden eagle	9	Occupied by Prairie Falcon
Golden eagle	14	Occupied by Red-tail Hawk
Golden eagle	15	Unoccupied
Large Raptor	11	Unoccupied

Large Raptor	16	Unoccupied
Small Raptor	10	Occupied by Common Raven
Small Raptor	12	Unoccupied

Notes:
All nests shown in this table are within the 1-mile buffer of the Project area.
Two nests reported by WRC (2022b), 5A and 5B, belong to common ravens and are not included in this table.

Table 2-3. Baseline Noise Levels Measured Near Lek Sites

Weighting	Descriptor	4 a.m. to 9 a.m.			6 p.m. to 10 a.m.			24-Hour Average		
		Cotton wood Upper Lek	Banjo 1 Lek	Project Center	Cotton wood Upper Lek	Banjo 1 Lek	Project Center	Cotton wood Upper Lek	Banjo 1 Lek	Project Center
dB(A)	L_{min}	9.3	10.3	9.5	12.3	11.4	14.2	12.9	12.7	14.4
	L_{max}	59.1	60.9	52.2	58	55.4	51.5	59.6	58.6	54.6
	L_{eq}	33.5	34.9	29.4	35.1	30.3	31.2	36.4	33.1	34.4
	L_{10}	32.9	32	29.6	36.8	29.7	33	38.2	32.2	36.7
	L_{50}	21.8	19.5	20.1	26.8	19.8	25	28.1	22.2	27.7
	L_{90}	14.5	13.7	14.4	18.9	14.9	19.4	20.1	17	20.7
dB(C)	L_{min}	27	20.3	20.2	34.7	27.5	28	35.7	28.7	29.4
	L_{max}	75.8	70.5	61.8	79.4	70.7	64.6	81.5	73.8	68.9
	L_{eq}	50.2	44.5	39	56.7	45.7	44.3	58.3	48.4	48.7
	L_{10}	49.5	41.6	39.2	58.3	45.1	46.1	60.1	47.5	51
	L_{50}	38.7	29.4	30	48.4	35.5	38.3	50.1	37.7	42.1
	L_{90}	31.9	23.7	24.8	40.9	30.9	33	42.4	32.7	35.3
dB(Z)	L_{min}	34	26.1	24.4	42	34.2	34.2	42.8	35.5	36
	L_{max}	82.8	76.3	66.1	86.7	77.4	70.7	88.6	80.6	75.5
	L_{eq}	57.2	50.2	43.3	63.9	52.4	50.5	65.4	55.2	55.3
	L_{10}	56.5	47.4	43.5	65.6	51.8	52.3	67.2	54.3	57.6
	L_{50}	45.7	35	34.3	55.7	42.2	44.4	57.2	44.5	48.7
	L_{90}	38.9	29.5	29	48.2	37.6	39.1	49.5	39.5	41.9

Notes: Table reproduced from Saxelby (2022)

2.2.2 Bats

Acoustic monitoring, infrared video monitoring, and hibernacula surveys were conducted to identify bat species and potential roosting habitats in the Project area. Seasonal acoustic monitoring (spring, summer, fall) was conducted at 3 locations in the Project area and an off-site location. The detectors in the Project area were placed near 2 abandon mine lands (AMLs) (WA-298 and WA-299), and near a gated culvert (WA-302). The off-site location was in a steep canyon below the outflow of Squaw Reservoir (location ID is referred to in WRC

2022b as "SQRES"). The canyon is described as having 100-foot high cliff faces through which Squaw Creek flows. Along the banks of the creek, willow and cottonwood trees were observed. The detector was placed in the canyon, approximately 300 feet west of the Project boundary. Monitoring locations are shown in Figure 2-1.
Twelve species of bats were positively identified from the acoustic surveys (Table 2-4). Eleven of those species were detected from the monitors placed in the Project area, and one additional species, the spotted bat, was detected only at the off-site monitoring location.

The highest number calls were recorded at the monitoring station near WA-302 (1205 calls over one monitoring period) and at the outlet of Squaw Reservoir (1123 calls over 2 monitoring periods). The most frequently recorded specie call was the canyon bat, representing 41.8 percent of the recorded calls, followed by the Townsend's big-eared bat with 23.7 percent of the recorded calls. Species infrequently detected include the big brown bat, spotted bat, hoary bat, silver-haired bat, long-eared myotis, and little brown bat, each representing less than 1 percent of the recorded calls. Relative abundance of recorded calls is not a direct measure of abundance but could be considered a relative index of activity.

The spotted bat is a state-listed threatened species. Four call records of this specie were detected in August at the off-site location near Squaw Reservoir. The spotted bat roosts primarily in crevices in cliff faces, but mines and caves may occasionally be used (Bradley et al. 2006). The species is a year-round resident in Nevada. This species' dependency on rock-faced cliff roosting habitat within 40 kilometers of foraging areas limits spotted bats to small geographic areas with specific geologic features (Luce and Keinath 2007). The habitat of the off-site location is different than habitats in the Project area, but consistent with preferred roosting habitat for the spotted bat. The presence of a large water source and riparian habitats at this location would also be expected to attract a greater variety and population of bats foraging in the area.

Video monitoring was also conducted near WA-0298 to assess the potential use of this feature as roost habitat for Townsend's big-eared bat or other bat species. However, no exit or entry activity was observed at this portal. Therefore, the acoustic files were determined to have captured species passing through this area only.

Seven (7) hazards in the Project area are recorded in the Nevada Division of Minerals (NDOM) database of AMLs. During field reconnaissance, an unlisted shaft was discovered in the field upslope of WA-0299 (shown in Figure 2-1 as WA-299a). The site was fenced by not closed.

Internal surveys were attempted for 6 of the NDOM features during the cold season, but could not be completed due to portal gating, collapse, or blockages at entry points. Data on the gated workings was not part of the original NDOM data set. According to NDOM (WRC 2022b), the gates were installed in 2014 by the Bureau of Reclamation under the direction of BLM. The seventh hazard, AML WA-303, is described in the hazard sheets as a closed (backfilled) shaft and therefore was not further investigated.

Of the eight AML hazards in the Project area, 2 portals (WA-298 and WA-300) are at least partially blocked by debris but may have limited bat access; however, WA-298 was found not to be used by bats during visual monitoring. The unlisted shaft (WA-299a) is open, and bat use not determined. Feature WA-301 is fully blocked and would not provide bat use. The remaining 4 hazard features were gated or collapsed and bat use was described as undetermined.

Other day and night roosting habitat in the Project area includes juniper trees, and rock outcrops and talus fields in the low elevation portions of the Granite Range above the break in slope.

Table 2-4. Bat Species Calls Recorded in the Project Area

Common Name	Scientific Name
Pallid bat	*Antrozous pallidus*
Townsend's big-eared bat	*Corynorhinus townsendii*
Big brown bat	*Eptesicus fuscus*
Spotted bat	*Euderma maculatum*
Hoary bat	*Lasiurus cinereus*
Silver-haired bat	*Lasionycteris noctivagans*
California myotis	*Myotis californicus*
Small-footed myotis	*Myotis ciliolabrum*
Long-eared myotis	*Myotis evotis*
Little brown bat	*Myotis lucifugous*
Canyon bat	*Parastrellus hesperus*
Brazilian free-tailed bat	*Tadarida brasiliensis*

Table 2-5. Hazard Features in the Project Area

Feature ID	X Coordinate	Y Coordinate	Hazard Type [a]	Inferred Bat Use [b]
WA-297	288577	4524478	Adit	Small opening, bat access uncertain
WA-298	288456	4525054	Adit	Gated but likely bat access
WA-299	288603	4525093	Adit	Gated, unknown bat use
WA-299a	288636	4525093	Shaft	Fenced but not gated
WA-300	288653	4525141	Adit	Partially blocked, possible limited bat access
WA-301	288621	4525634	Decline	Blocked by debris, no bat access
WA-302	288546	4525665	Adit	Gated, unknown bat use

3.0 BIRD AND BAT PROTECTION MEASURES

Bird and bat protection measures are Environmental Protection Measures (EPMs) and Best Management Practices (BMPs) that will most directly avoid and minimize impacts to birds and bats. The measures described below are those directly applicable to the protection of birds and bats and are derived from the general requirements established in the BLM's surface management regulations at 43 CFR § 3809 and the Nevada Division of Environmental Protection (NDEP) Bureau of Mining Regulation and Reclamation mining reclamation regulations. These measures are to be considered part of the operating plan and procedures.

Project protection measures described in this section address the types of protection measures recommended for mine sites (NVMA 2018), which include habitat management, chemical exposure management, administrative controls, and monitoring and deterrence measures. Other measures, such as controlling fugitive dust and noxious weed control, will indirectly minimize impacts to all wildlife by reducing the environmental footprint of the proposed Project and preventing unnecessary and undue degradation. Those measures, though not explicitly stated here, were incorporated into considerations of risks for the Project.

3.1 Habitat and Chemical Management

MNV will keep all project-related disturbance to a minimum. During operations, vehicles would travel on established roads to minimize disturbance of the native habitat in the Project area, which would minimize habitat impacts and reduce physical harm of avian and bat species during Project activities.

Activities are expected to occur on a 24-hour, 7-day a week basis. Nighttime lighting will be minimized to the extent possible (while ensuring safety to humans) and lights will be directed and shielded downward to minimize sky glow.

MNV will begin reclamation activities concurrently upon determination that the disturbance is no longer needed for exploration activities. Early initiation of reclamation will stabilize soil, reduce dust and naturalize runoff.

A reclamation seed mixture will be designed to include proven species for revegetation, and/or are native species found in the plant communities prior to disturbance. The plant

communities that will form will provide a food source and habitat for native bird and bat species and their prey.

Any hazardous and solid wastes that will be generated during the Project will be managed and stored according to state, federal, and local regulations. The materials will be either recycled or disposed in accordance with state, federal, and local regulations. A Solid and Hazardous Waste Management Plan will be developed for the Project that outlines proper storage, handling, and disposal methods that include preventing exposure of substances to wildlife and the environment. A training program will be implemented to inform employees of their responsibilities in proper waste disposal procedures.

Any spills associated with wastes or chemicals will be managed under the Spill Contingency Plan, which will avoid or minimize exposure to wildlife.

3.2 Administrative controls

3.2.1 Wildlife Protections

MNV will prohibit the feeding or harassment of all wildlife.

Speed limits will be developed for the Project to minimize the risk of collisions between Project vehicles and wildlife.

MNV will ensure that all personnel and contractors receive training on the issues and protocols outlined in this BBCS to ensure that all personnel have a thorough understanding of their responsibility to raptor, bird, and bat protection and regulatory compliance.

MNV will comply with all federal, state, and local permits for the proposed Project.

3.2.2 Carcass Handling

Any avian or bat mortalities discovered by site personnel, or their contractors will be reported to MNV environmental personnel within 24 hours. Figure 3-1 includes a flowchart of procedures in the event of a raptor, bird, or bat mortality.

In the event that an animal sustains injury or experiences death from interaction with Project equipment, MNV or appointed biologists by MNV may need to handle, transport, or dispose of carcasses. If the need for such actions becomes apparent for a bird or bat, MNV would coordinate with the BLM and NDOW to ensure that all activities are in accordance

with applicable regulations and laws. If the carcass is of a golden eagle, MNV personnel would be instructed not to touch or handle the carcass unless there is a human-related safety emergency requiring immediate intervention. Dead eagles, or any species listed in the Federal or state ESA, would be reported to NDOW no later than beginning of the work day following the discovery and the USFWS Division of Migratory Bird Management and Law Enforcement within 24 hours. Personnel would in general be instructed not to rescue or move any injured or dead raptor species discovered unless it poses a health or safety risk to personnel or operations.

3.3 Monitoring and Avoidance Measures

Migratory Birds

If possible, MNV will time land clearing and surface disturbance to avoid activities during the migratory bird breeding season (March 1 through August 31 in accordance with Winnemucca BLM's approximate avian nesting season).

If surface disturbance occurs during nesting and breeding season for passerine birds, MNV will conduct pre-clearance nest surveys within the planned area of disturbance plus a 260-foot buffer to identify active nests. Buffers will be established in consultation with BLM around active passerine nests for the duration of breeding and nesting by the species.

Buffers around wetland and seep/spring habitats will be implemented to prevent destruction or disturbance to potential nesting and foraging habitats for birds and bats.

Raptors

For each year that operations are planned to occur within the breeding and nesting season for raptors (February 1 through August 31 for eagles, and March 1 through August 31 for all other raptors), MNV will monitor the nest activity status of raptor nests within 1 mile of planned activities. Monitoring will be conducted in the spring, prior to the start of Project activities, by a qualified biologist who will conduct a ground-based or aerial based survey, whichever is most effective at identifying nest use status. If an in-use raptor nest (other than a golden eagle) is detected within 1 mile from Project activities, MNV will work with the BLM and NDOW to determine if a nest monitoring program is appropriate to ensure raptors are not disturbed, and whether an activity buffer should be applied and the extent of the buffer, prior to initiation of activities in that area. The buffer dimension will depend on the

species, age class, stage of nesting activity, location and visibility of nest, and habitat and topographical conditions. Adaptive management measures that MNV will implement, such as measures when a new, previously, unknown nest is found within or near the Project footprint, are addressed in the Adaptive Management section.

Greater Sage-Grouse

For each year of planned activities, MNV will conduct lek attendance monitoring of known leks within 4 miles of planned activities to confirm the inactivity status of leks. Monitoring will be conducted during the lekking season (March 1 – May 15) following NDOW lek survey protocols.

For any active leks, MNV will work with BLM and NDOW to establish protocols (e.g., sound barriers or distance buffers) around active leks to ensure that project noise does not impact GRSG lekking behavior.

Bats

If tree removal is necessary, roost checks would occur for mature trees (Phase III or Old growth stands) prior to removal avoid bat mortality. Any trees being used as roosts would not be removed until the tree is no longer in use.

Applicable actions from the 2015 Winnemucca District Office Resource Management Plan to protect bat roosts were incorporated into the EPMs. Applicable actions include:

> *Action SSS 7.1: Protect bat habitat by implementing mitigation measures to reduce adverse impacts. Mitigation measures include avoidance, no surface occupancy, buffer zones, seasonal restrictions, off-site mitigation, use restrictions, and rehabilitation.*
>
> *Action SSS 7.2.1: Discourage mining-related activities, such as drilling or blasting within 200 yards of occupied habitats. Where mining-related activities cannot avoid bat habitat, develop and implement mitigation measures, including off-site mitigation.*

To minimize and mitigate effects to bats that may roost in AMLs, MNV will implement the following EPMs during Project activities:

- If possible, drilling and construction activities within 200 yards of potential roost sites (WA-297, WA-299, WA-299a, WA-201, WA-302, WA-303) will occur outside the hibernation period (November 1 – April 30) and maternity period (May 1 – August 30).

- If Project activities cannot be avoided within 200 yards of potential roosts, then prior to seasonal Project activities, additional visual and acoustic monitoring will occur to determine bat use of the features during sensitive roosting periods. If bats are found to be using these features for hibernation or maternity use, MNV will avoid activity within the sensitive roosting period, and will follow up with NDOW to determine further measures to prevent impacts to bats (e.g., fortifying existing bat gates or employing temporary bat exclosures).

4.0 RISK ASSESSMENT

The type of risks to birds and bats from Project activities considered the potential for mortality or injury, toxicity from chemical exposure, nest or roost destruction or abandonment, or loss of habitat directly or indirectly. These risks address provisions of the MBTA (16 U.S.C. §§ 703-712), BGEPA (16 U.S.C. §§ 668-668d), and conservation plan considerations and guidance by the USFWS (2013), and Nevada Mineral Exploration and Mining Industry (NVMA 2018).

Risk assessments are inherently a probabilistic analysis; therefore, risks are evaluated in terms of probability, not certainty, and ranked as either negligible, low, moderate, or high. Risks were evaluated to birds and bats after incorporating the protection measures described in Section 3.0 to reduce risks to these species and the potential for take. After incorporating the protection measures, this risk assessment demonstrates an overall low potential for risk.

4.1 Risk endpoint 1: Mortality or Injury from Collision

Conclusion: Low Risk

Potential Causes: Mortalities or injury to birds and bats could occur due to collisions with vehicles and equipment. Birds may be attracted to roads if mortalities occurred to other animals and the carcasses of the animals are left in the open. Birds may be attracted to the

site if employees or contractors dispose improperly of trash. Bats and some birds may be attracted to nighttime lighting which attract insects.

Analysis: Risks to avian or bat species of mortality or injury from equipment collisions associated with the Project are unlikely. Birds and bats flying through the area would likely avoid stationary equipment. Pre-disturbance nest clearance surveys and avoidance of AMLs potentially used for sensitive roosting periods would reduce species' occurrences in areas under construction. Wastes will be properly disposed of and carcasses managed to prevent attraction of animals to roads and activity areas.

Collisions between birds and vehicle traffic to and from the site represents a low incremental risk. Traffic volume along SR 447 (traffic monitoring station 0310388, at the junction of SR 447 and Smoke Creek Road), reported by the Nevada Department of Transportation (NDOT) averaged 120 to 240 vehicles daily. Traffic volumes would not substantially increase (increases are estimated to be less than 5 percent) as a result of proposed activities. Vehicles would be required to observe posted speed limits. Collision with bat species is less likely given that bats do not congregate near roads or use roads for foraging opportunities.

Lights used for nighttime operations could interfere with the navigation of night-migrating birds and would attract aerial insects, and therefore birds and bats, to equipment. EPMs such as minimizing nighttime lighting and directing and shielding lights downward will avoid interference with the navigation of night-migrating birds and minimize the attraction of insects as well as insectivorous species.

4.2 Risk Endpoint 2: Toxicity due to chemical exposure

Conclusion: Negligible Risk

Potential Causes: Exposure to chemicals used for the Project, for example petroleum products used for equipment and vehicle operation and maintenance, if left out in the open or spilled, could result in mortalities due to an acute lethal dose, or significant effects on growth, reproduction, or behavior if exposed long term.

Analysis: Risks to wildlife from chemical exposure are negligible. The Project would not generate or dispose of any hazardous waste. Petroleum products would be used but not stored on-site. Diesel, oil, and lubricants would be transported to the site in portable containers (e.g., tanks in the pickup trucks for diesel fuel) but would not be stored on-site.

Any spills associated with wastes or chemicals will be managed under the Spill Contingency Plan, to minimize exposure to wildlife. A Solid and Hazardous Waste Management Plan will be developed for the Project that outlines proper storage, handling, and disposal methods that include preventing exposure of substances to wildlife and the environment.

4.3 Risk Endpoint 3: Active nest or roost destruction, nest abandonment

Conclusion: Low Risk

Potential Causes: Intentional destruction of nest or roost sites would occur if sites were within planned disturbance areas. Incidental or unintentional disturbances to birds or bats could occur from activity near nest or roost sites causing young/egg abandonment due to noise and human activity.

Analysis: MNV has developed multiple measures to prevent nest destruction or disturbance of nests/roosts during breeding and sensitive roosting periods. Measures incorporated into the project design will minimize surface disturbance and Project activities. Administrative controls will minimize the types of human activities that could disturb bats and birds. Raptor nest monitoring and pre-disturbance migratory bird nest clearance surveys will identify areas to avoid and establish appropriate mitigation to prevent intentional or unintentional nest destruction and disturbance to raptors and birds. Buffers around AMLs and additional monitoring to confirm use of AMLs by bats if needed will prevent disturbances to bats during sensitive maternity and hibernation periods. Project activities would not remove or destroy potential nesting sites or bat roost sites that would occur on rock outcrops, or in AMLs. Roost and nest checks in mature and old-growth pinyon pines would occur before any tree removal to avoid roost and nest destruction.

4.4 Risk Endpoint 4: Habitat Loss

Conclusion: Low Risk

Potential Causes: Direct loss of habitat would be caused by the development of drill pads and new roads. Decreased habitat use would occur immediately surrounding disturbances due to noise and human activity. GRSG lekking activity could be impacted if noise levels increase more than 10 dBA during lekking periods.

Analysis: Up to 400 acres of surface disturbance would occur over the life of the Project, with reclamation occurring as soon as practicable to minimize habitat loss. Some of the

directly affected habitats would include invasive annual grassland communities that have low habitat quality for foraging and nesting. Disturbed and annual grasslands comprised the majority of the baseline study area (Cedar Creek 2022). The baseline study area encompasses the Project area. The Project area is in a remote, undeveloped area surrounded by abundant habitat. The remaining undisturbed habitat in the Project area and habitats surrounding the Project area would accommodate species displacement over the temporary time period of Project operations. Some increased intra and inter-species competition may occur due to species displacement, though with the total surface disturbance representing 11.6 percent of the Project area, and less than 0.01 percent of game management units, the level of increased species competition is expected to be low. Buffers around wetland habitats and would ensure that this habitat use by birds and bats would not be disturbed. Project activities would not remove or destroy potential nesting sites or bat roost sites that would occur on rock outcrops, or in AMLs.

The Project would not be expected to restrict bird and bat behavior through the area. Birds and bats flying through or foraging in the Project area may avoid areas surrounding the activity due to noise and human activity. Some birds may acclimate to the activities and begin to reoccupy areas formerly avoided.

Monitoring of known GSRG lek sites will occur each year that Project activities are planned during lekking season; for active leks, avoidance buffers and/or noise mitigation techniques will be employed to avoid noise increases of more than 10 dBA, which could disturb lekking behavior. GRSG habitat conservation will be addressed in the Project's CCS program.

Following reclamation, vegetation communities will be re-established, and some areas may provide improved foraging habitat compared to existing vegetation communities (i.e., invasive annual-dominated vegetation). Land uses of reclaimed land are expected to be compatible with uses on the majority of reclaimed land.

In sum, habitat losses would occur due to Project activities and represents a low risk for appreciable loss of foraging habitat for birds and bats. A majority of habitat in the Project study area are disturbed and consist of low-quality forage habitat, and abundant, habitat surrounding exploration activities would likely accommodate species' temporary displacement. Protection measures will be in place to avoid loss of raptor and bird nesting sites, sensitive bat root sites, and GRSG lekking behavior.

The location where the state-threatened spotted bat was detected was off-site, 300 feet away from the Project boundary and on the other side of SR 447. Light and noise effects of project exploration activities would not be expected to affect conditions inside the canyon where bats may be roosting and foraging. There is no direct line of site into the canyon. The spotted bat was not detected in the Project area where habitat conditions are not preferred by the species.

5.0 REPORTING

MNV would report and manage all bat and avian injury or mortality. Figure 3-1 shows a flowchart of reporting timeframes and requirements depending on the type of species involved. The reporting of avian and bat mortality would be standard practice by MNV for the duration of project activities. A standard reporting form would be used to document all bird mortalities (Appendix B), and photographs of the bird carcass would be taken to accompany the form if possible.

6.0 ADAPTIVE MANAGEMENT

The conceptual adaptive management process is an iterative process that includes assessment, design, implementation, monitoring, evaluation and adjustment. By nature of this process, each adaptive management action should be based on the information from the planned monitoring. If a relatively high degree of risk exists, milestones and adjustments would occur early and often. To that end, MNV will regularly review the monitoring data from site investigations and any mortality reports to prioritize adaptive management needs. The following adaptive management strategies identify adjustments that might occur if a high degree of risk exists for bird and bat mortality or injury:

- If a bird or bat injury or mortality is detected, MNV will notify NDOW within appropriate timeframes. The Wildlife Incident Report Form will be filled out and provided annually or sooner if requested by the agencies. MNV will work with NDOW to determine causal factors in any mortality and develop an immediate plan to address potentially problematic areas or structures.

- If a new raptor nest is discovered within 1 mile of new planned Project activities, MNV will coordinate with NDOW to determine appropriate measures (e.g., monitoring and/or avoidance buffers) to ensure that raptor nesting behavior is not impacted. No raptor nests would be removed by MNV without appropriate permits in place to do so.

- Although unlikely, a situation may arise where MNV finds it necessary to obtain additional federal and state permits regarding avian or bat species as it relates to mortality, and avian nest removal and relocation. These could include incidental take permits, collection or salvage permits, and nest removal and relocation permits. In such a situation, MNV will work with the appropriate agencies to determine which permits are necessary and to acquire relevant permit applications. Under no circumstances will MNV perform any activity requiring a permit without first obtaining the proper permit or authorization to do.

- Sound buffering and/or avoidance buffers around active leks would occur to ensure that project activities are within acceptable noise levels around active leks.

Additional measures other than those listed above may be assessed during review of the BBCS if determined necessary by MNV. Although it is only practical to periodically revise or update the BBCS, the quality control component would be an ongoing process. Daily observations, operating procedures, personnel input, and new technologies would be applied to assessments during the periodic reviews of the BBCS. Revisions and updates to the BBCS would be made in consultation with the BLM and NDOW. Revisions and updates to the BBCS will be addressed with personnel at the Project area.

7.0 REFERENCES

BLM. 2008. Manual 6840, Special Status Species Management. Washington, D.C.: Department of the Interior, Bureau of Land Management. December 12.

BLM. 2010. Memorandum of Understanding between the U.S. Department of the Interior, Bureau of Land Management and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds. BLM MOU WO-230-2010-04. April, 2010. 14pp.

Bradley, P.V., M.J. O'Farrell, J.A. Williams and J.E. Newmark. 2006. The Revised Nevada Bat Conservation Plan. Nevada Bat Working Group. Reno, Nevada. 216 pp.

Cedar Creek. 2022. 2022 Baseline Biological Report for the Mtn. View Project.

Luce, R.J. and D. Keinath. 2007. Spotted Bat (*Euderma maculatum*): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: http://www.fs.fed.us/r2/projects/scp/assessments/spottedbat.pdf

NVMA. 2018. Golden Eagle Protection Best Practices, Nevada Mineral Exploration and Mining Industry. Prepared by Nevada Mining Association, Reno, Nevada. August

Saxelby. 2022. Baseline Noise Survey for the Millennial NV LLC, Mtn. View Exploration Project. December.

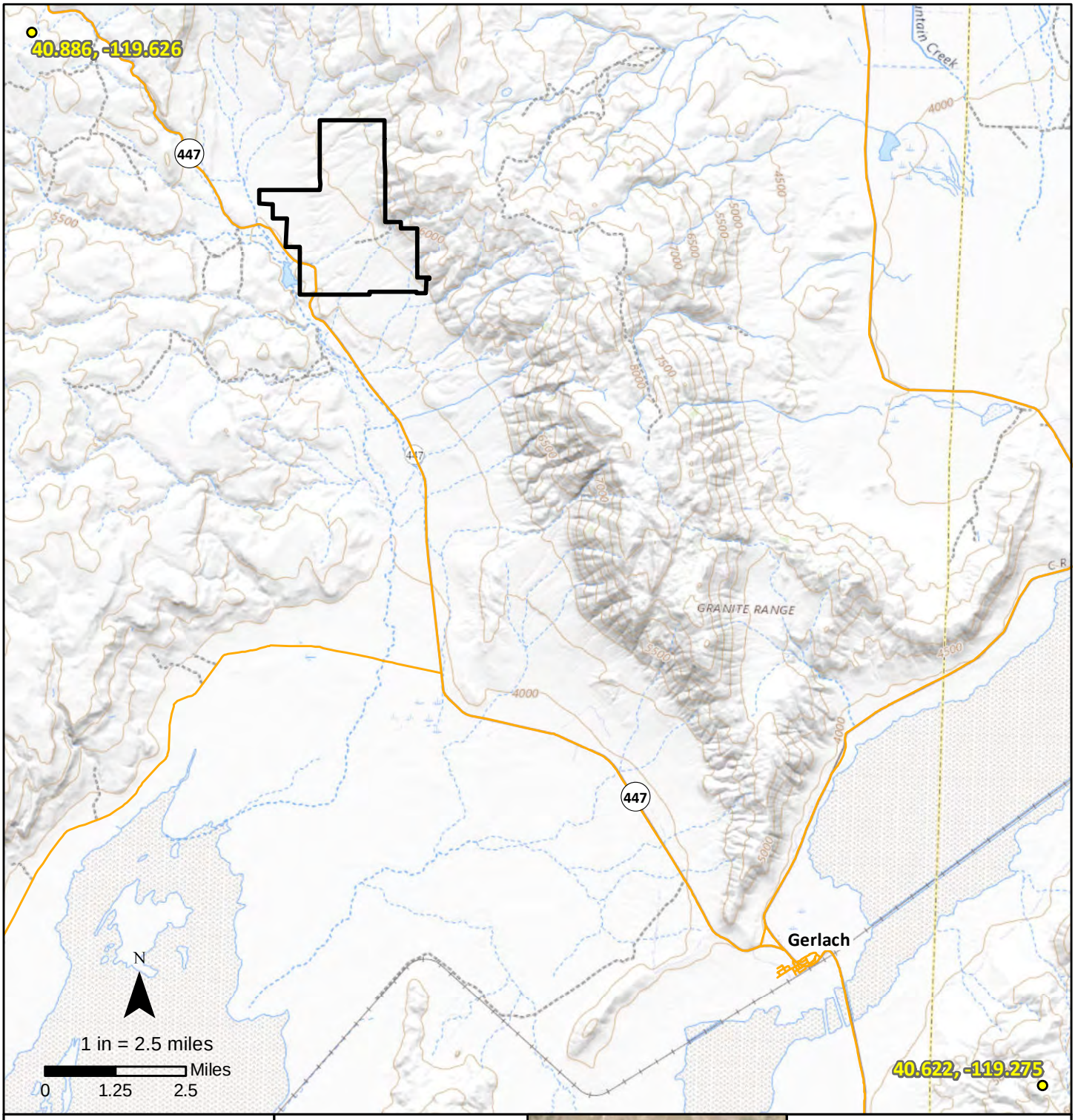
USFWS. 2013. List of Migratory Bird Species Protected by the Migratory Bird Treaty Act as of December 2, 2013. Available at: https://www.fws.gov/migratorybirds/pdf/policies-and-regulations/ListofMBTAProtectedSpecies1312.pdf.

Western Regional Climate Center (WRCC). 2023. Gerlach, Nevada and Fernley, Nevada. Available online at: https://wrcc.dri.edu/beat. Accessed January 2023.

WRC. 2022a. Mountain View Project 2022 Golden Eagle and Raptor Nest Survey. September.

WRC. 2022b. Mountain View Project 2022 Baseline Bat Surveys. September.

Figures

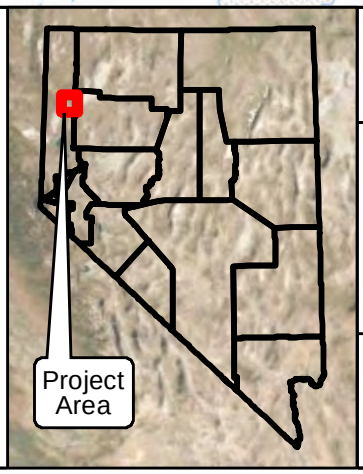


Coordinate System: NAD 1983
UTM Zone 11N
Projection: Transverse Mercator
Datum: North American 1983
Created on August 5, 2022
Service Layer Credit: USGS The National Map (ESRI Basemap)

Made in accordance with the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program, as amended on February 10, 2016, by:
Cedar Creek Associates, Inc
PO Box 272150
Fort Collins, CO 80527

Map Legend

- Mountain View Study Area
- Road

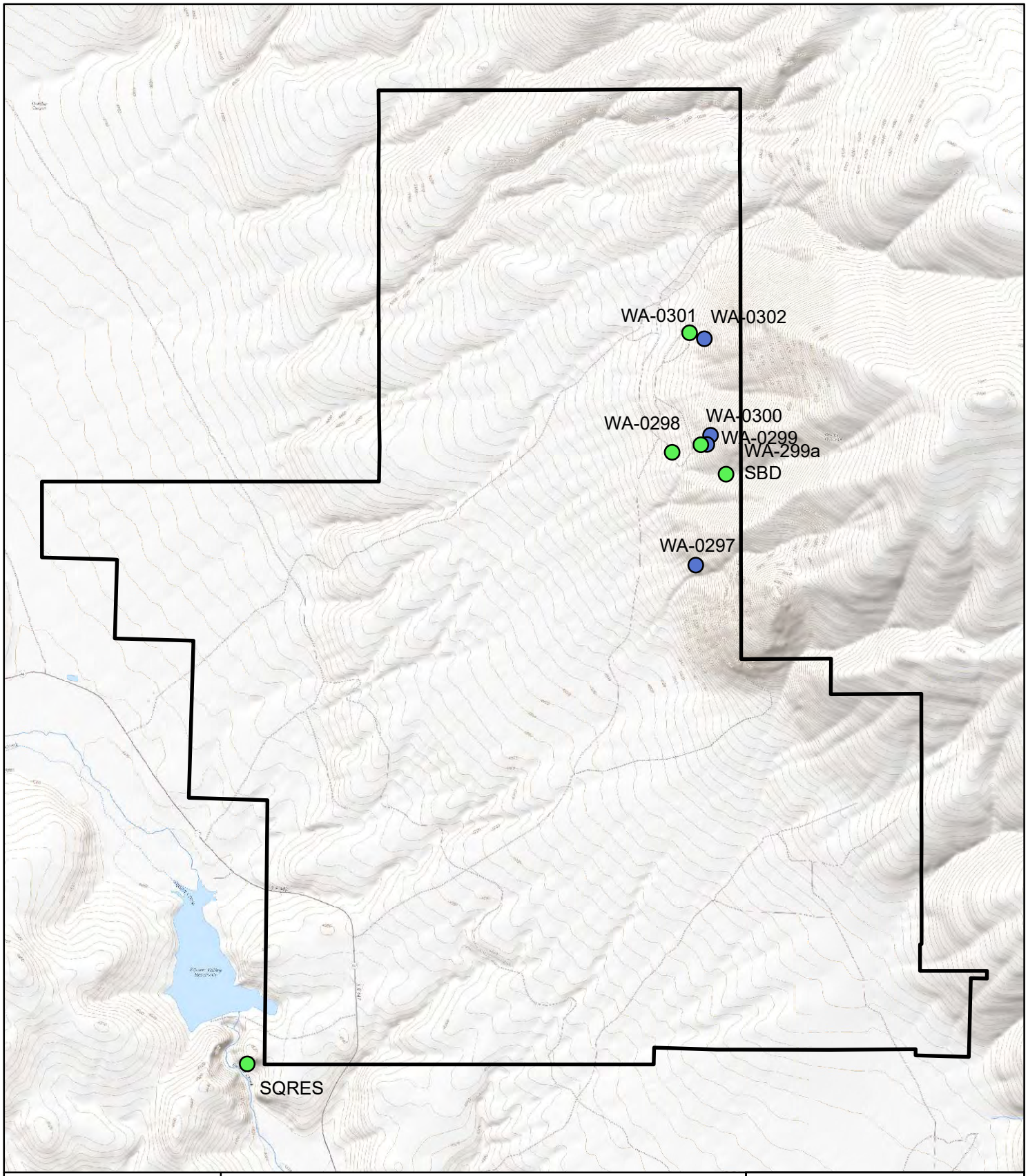


Mtn View Project

Figure 1-1

Project Location

CEDAR CREEK ASSOCIATES, INC.



0 0.15 0.3 Miles

N W E S

Map Legend

Mtn View Study Area

AMLs and Monitors

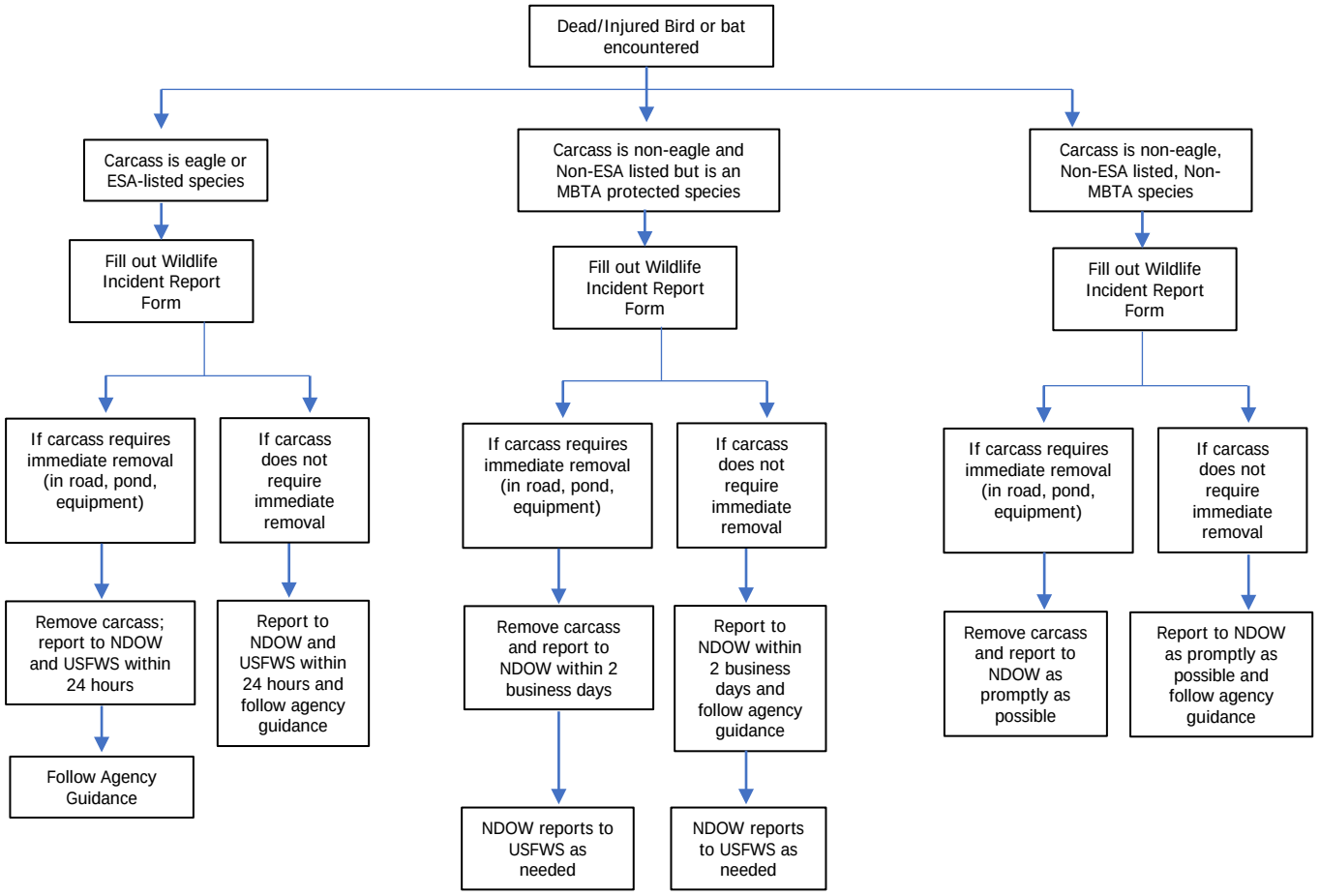
- AML - Not monitored
- AML or Monitoring Station Site

CEDAR CREEK ASSOCIATES, INC.

Mtn View Project

Figure 2-1
AML Sites and 2022 Bat Monitoring Locations

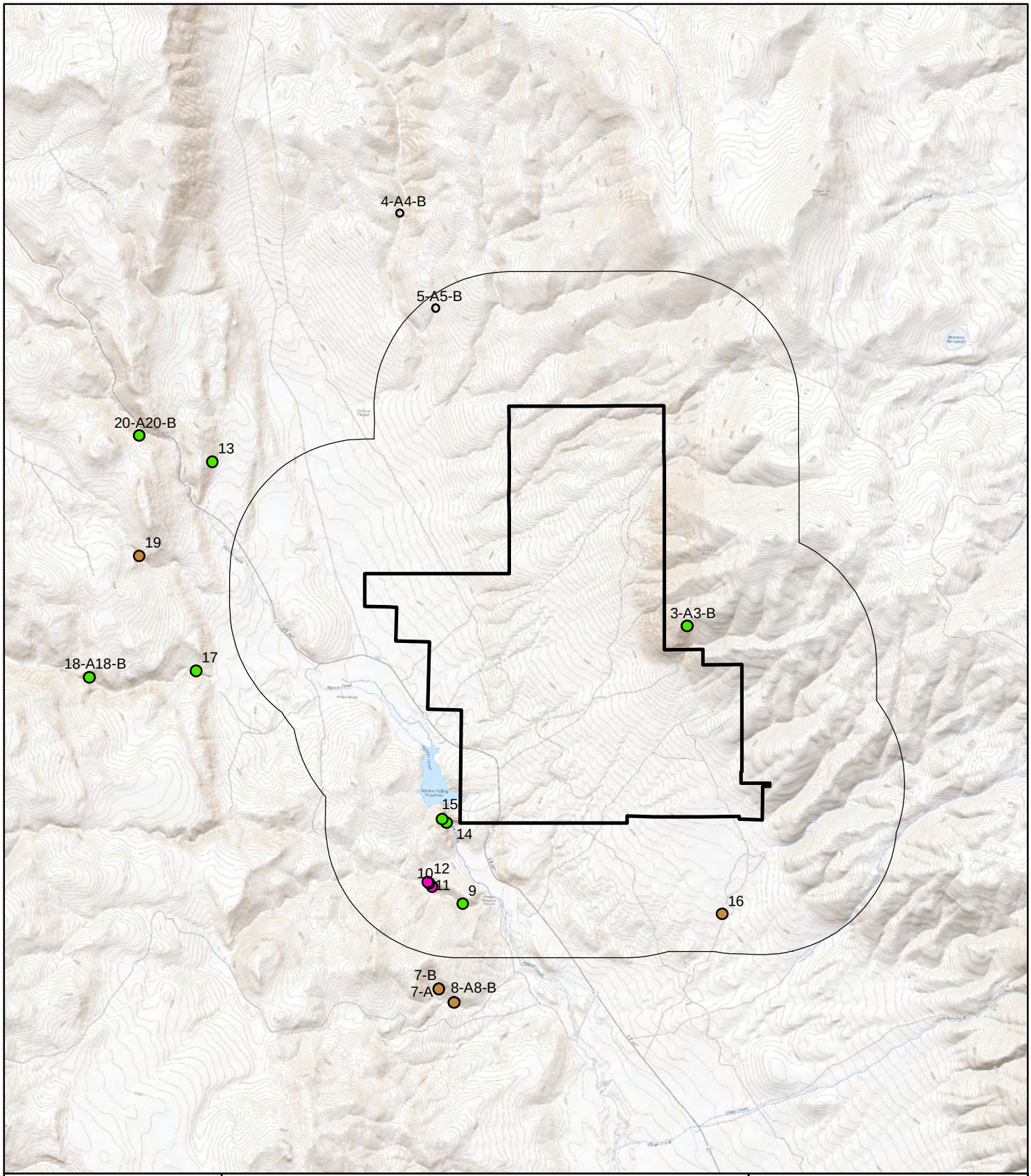
Coordinate System: XXXXXXXX



CEDAR CREEK ASSOCIATES, INC.

Figure 3-1. Bird or Bat Mortality Flow Chart

Appendix A



0 0.35 0.7 Miles

N W E S

Map Legend

- Mtn View Study Area
- Mtn View 1 Mile Buffer
- Small Raptor Nest
- Corvid Nest

Raptor Nest Type - 2022

- Golden Eagle Nest
- Large Raptor Nest

Mtn View Project

Figure A-1
2022 Raptor
Nest Map

CEDAR CREEK ASSOCIATES, INC.

Coordinate System: UTM NAD 83 Z11

Appendix B

Wildlife Incident Reporting Form

Facility Name: _____
Date of Incident (Month, Day, Year): _____
Time of Discovery: _____
Finder's Name and Contact: _____

Wildlife type (Circle)	**Species (if available)**	**Number**
Large Mammal		
Small Mammal		
Raptor		
Shorebird		
Songbird		
Upland Game Bird		
Waterfowl		
Other		

Location Found

UTM Easting	UTM Northing	Location Description

Cause of Injury or Mortality (Circle):

Collision Natural Other_____
Electrocution Unknown

Immediate Removal Required for Safety Emergency? (Y/N)
Description of Emergency requiring handling/removal:

Disposal Status (Circle) Date of disposal

Buried on site
In freeze
Given to NDOW

Notes / Remarks:

Appendix E:

Weed Management Plan

Weed Management Plan

for the

MTN. VIEW PROJECT

MILLENNIAL NV, LLC

January 2023

Prepared for:

Millennial NV, LLC

Reno, NV

Prepared by:

CEDAR CREEK ASSOCIATES, INC.

TABLE OF CONTENTS

TABLES

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ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
Cedar Creek	Cedar Creek Associates Inc.
GPS	Global Positioning System
mph	miles per hour
MNV	Millennial Nevada LLC
Mtn.	Mountain
NDA	Nevada Department of Agriculture
NRS	Nevada Revised Statutes
Plan	Weed Management Plan
PoO	Plan of Operations
Project	Mtn View Exploration Project
PUP	Pesticide Use Proposal
USDA	United States Department of Agriculture

1.0 INTRODUCTION

Millennial Nevada LLC (MNV) has prepared this Weed Management Plan (Plan) as part of the Plan of Operations (PoO) for the Mountain (Mtn) View Exploration Project (Project). This proposed exploration drilling project is located on public lands administered by the Bureau of Land Management (BLM), Winnemucca District Office in Washoe County, Nevada (Figure 1).

The purpose of this Plan is to prescribe methods to prevent and control the spread of noxious weeds during and following construction and operation of the Project. MNV and its contractors will be responsible for carrying out the methods described in this Plan.

1.1 Plan Purpose

MNV recognizes the economic and environmental impact that can result from the establishment of noxious weeds and has committed to a proactive approach to weed control. This noxious weed species monitoring and control plan is prepared as a property-wide plan to be implemented for all ongoing and future projects for the Mtn. View property. This plan contains management strategies, provisions for monitoring and treatment evaluation, and provisions for treatment.

The BLM policy relating to the management and coordination of noxious weed activities is set forth in *BLM Manual 9015 - Integrated Weed Management*. BLM policy requires that all ground-disturbing projects and any projects that alter plant communities be assessed to determine the risk of introducing noxious or spreading noxious weeds. If the risk is moderate or higher, a positive management program needs to be established. Risk is assessed due to the likelihood that a species will establish as a result of the action, which is based on the presence of noxious weeds in the general area of the project (i.e., within the watershed or other regional area) and the effect of the action on the vegetation and soil in the area. If there are noxious weeds already present in the area, and if the action will create seedbed conditions conducive to these species, then the risk is considered high. Surface disturbing activities that expose bare mineral soil or create mesic conditions (e.g., infiltration ponds) generally result in a high-risk rating.

1.2 Goals and Objectives

The goal of this Plan is to avoid or limit increases in noxious or invasive weed establishment or spread. To achieve this goal, Project activities will be conducted in a manner that will:

- Avoid or minimize the introduction or spread of noxious and invasive weeds into previously uninfested areas or beyond an existing infestation zone. An infestation zone is defined as an area containing a single large patch of weeds (more than ~10 individuals closely spaced) or a general area containing several individual plants dispersed over the area;
- Avoid or minimize substantial increases in noxious and invasive weed population or extent within an existing infestation zone; and
- Avoid or minimize direct or indirect adverse effects on threatened and endangered, and special status plant or wildlife species by invasive and noxious weeds.

1.3 Project Description

The Project is located on public lands administered by the BLM in Washoe County, Nevada (Figure 1). The Project area is in Township 34 North, Range 22 East (T34N, R22E), all or part of Sections 5 through 9 and 16 through 21. The 3,425-acre Project area can be accessed directly off of Nevada State Route (SR) 447, about 13 miles north of Gerlach, Nevada.

The Project will entail exploration drilling activities within the Project area. The activities generally will occupy the development and operation at up to 10 small exploration sites at a time, consisting of up to 3 drilling contractors per site and up to 5 MNV staff in the area, at any given time. Exploration activities will occur for a period of up to 10 years.

2.0 NOXIOUS WEED INVENTORY

Baseline field surveys were conducted throughout a study area encompassing the Project area (Cedar Creek 2022). The noxious weed surveys focused on invasive, nonnative species managed under Nevada Revised Statutes (NRS) Section 555 and included on the noxious weed list maintained by the Nevada Department of Agriculture. A copy of this list and the definitions of noxious weed categories are provided in Appendix A.

Three species of noxious weeds were recorded during field surveys: *Cardaria draba* (whitetop), *Acroptilon repens* (Russian knapweed), and *Taeniatherum caput-medusae* (medusahead). Points of observation are shown in Figure 2. Areas of infestation were

counted (if a few individuals were seen) or estimated visually (for more than about 20 individuals) at each point of observation. Whitetop, a Class C noxious weed, was the most widespread in the Project area, with heaviest concentrations along roadsides and associated with wetlands. Russian knapweed, a Class B noxious weed, was observed at one location in a dense patch along a seep/spring. Medusahead, a Class B noxious weed, was observed in patches along drainages in two areas on the west side of the study area. Table 1 summarizes the areas of infestation for each observation point.

Other non-native species were also observed in the Project area, including: *Agropyron cristatum, Bassia prostate, Bromus briziformis, Bromus tectorum, Ceratocephala testiculata, Descurainia pinnata, Descurainia sophia, Dieteria canescens, Erodium cicutarium, Halogeton glomeratus, Lepidium perfoliatum, Sarsola tragus,* and *Sisymbrium altissimum*. *Agropyron cristatum* (crested wheatgrass) is often used as a post-fire seed species and was noted in burned areas of the study area.

3.0 NOXIOUS WEED MANAGEMENT MEASURES

Components of the noxious weed management measures will include preventative measures, measures to be taken during construction, operations, reclamation, and post-reclamation. Treatment methods during each of these phases of the Project are also described.

3.1 Preventative Measures

Prevention of new noxious weed infestations is the most cost-effective means of noxious weed control. Prevention, or more accurately, reduction of potential for noxious weed establishment involves awareness, education, and implementation of positive cultural practices.

The implementation of this plan will be included in the assigned duties of an individual employed or contracted by MNV. This individual will keep records of all noxious weed observations and will be responsible for developing the appropriate action for the eradication of new weed infestations. This individual will also be responsible for monitoring and control efforts, and for notifying contractors that vehicles need to be cleaned before entering the Project site.

Awareness and education of Project employees and contractors will occur at Project outset and continue throughout the life of the Project. While not every employee needs to be able to identify noxious weeds, there is key MNV personnel who will have training in noxious weed identification. Noxious weed identification training will occur during late winter or early spring, and an annual refresher course will be included. As noxious weeds are detected, trained individuals should visit the infestation to reinforce the noxious weed identification training. If treatments are to be conducted by MNV personnel, then training and certification for restricted use pesticides are recommended.

There are also a variety of cultural practices that can reduce the establishment of noxious weeds. Noxious weeds can arrive on a site by a variety of methods. Cultural practices are directed at limiting the potential that a seed or propagule that enters the property boundary germinates and establishes. Given the nature of the Project activities and the amount of exposed soil and growth media that are constantly available as suitable seedbeds for many noxious weeds, several cultural practices can be employed to minimize the risk of noxious weed establishment. Cultural practices can also be used to reduce the potential that seed enters the property; however, even with the strictest controls of anthropogenic means of transporting noxious weeds, windblown, water-transported, and animal-transported seed are likely to enter the property. The following cultural practices can reduce the potential for seeds entering the property or establishment on site:

Vehicle Cleaning. Vehicles used in areas of known noxious weed infestations will be cleaned (especially the undercarriage) before leaving the site to prevent the spread of noxious weeds off-site. Equipment mobilizing to the site will be cleaned before entering the site to prevent new noxious weed species from being transported to the site.

Using Weed-Free Materials. Certified noxious and invasive weed-free materials (e.g., straw bales, certified weed-free seed) will be used where needed during construction, operation, and reclamation.

Minimize Disturbance to Existing Vegetation. Vehicles will be confined to existing roadways and not permitted to conduct cross-country travel unless involved in an approved activity. This will reduce the potential for new weed establishment.

Effective Reclamation. Reclamation earthwork and seeding should occur as soon as practicable to allow the seeded species to establish before non-native invasive species and

noxious weeds can dominate the reclaimed surfaces. Suitable seed mixes will be applied as described in the Reclamation Plan.

3.2 Measures During Construction and Operations

In addition to preventative measures described in the previous section, the following measures will be implemented prior to or during construction of roads and pads, during exploration activities and prior to reclamation activities:

Coordination with Agencies and Other Groups on Noxious and Invasive Weed Management. MNV staff will coordinate with the BLM to ensure that the appropriate best management practices are implemented to minimize noxious weed introductions and dispersal.

Road Maintenance. Equipment operators involved in road maintenance activities will be trained in weed identification so that they do not blade areas infested by weeds. Road maintenance activities can spread seeds or weed parts that can establish in new locations. The weed infestations should be treated and manually removed before any road maintenance activity is conducted.

Seed Application. Locations that have been treated for noxious weeds may be seeded with either the interim seed mix or reclamation seed mix during the fall after treatment. Leaving the area "fallow" after treatment increases the risk that either the same species or another species of noxious weed or non-native, invasive species will establish on the site. Seeding with a grass-only mixture is recommended if follow-up treatment is necessary; many of the herbicides are selective to broad-leaved plants, and any forbs or shrubs seeded will be susceptible to the follow-up treatment, whereas most grasses are not susceptible.

Disposal. Noxious weeds may be cut and disposed of in designated areas or destroyed in a manner acceptable to the Nevada Department of Agriculture Plant Industry Division and Nevada Cooperative Extension.

3.3 Measures During Reclamation

Aggressive species, such as crested wheatgrass, other quick-start grass species, or forage kochia, should be used rather than native species that often do not establish well on disturbed sites. MNV personnel will check with land management agencies before seeding. Approved seed mixes will be used.

Whenever feasible, earthwork and reclamation seeding should occur within the same year to allow the seeded species to establish before noxious weeds can dominate the reclaimed surfaces. Using species in the seed mix that have been successful in previous reclamation efforts and seeds suited for the site conditions will also reduce the potential for noxious weed establishment by providing a dense perennial plant cover.

3.4 Treatment Methods

The goal of noxious weed control is to reduce weed populations below the level at which they are damaging. This includes environmentally damaging, such as displacing native species, or economically damaging, such as failure to achieve reclamation vegetation success criteria. Treatment is specific to the target species and environmental constraints. The noxious weed species found in the Project area can be removed effectively through mechanical removal or chemical herbicide application.

MNV will implement noxious weed control measures that will be in accordance with existing regulations and BLM jurisdiction. All treatments must be approved for use by the BLM.

Treatment methods may include one or more of the following methods:

Mechanical methods may include hand pulling or using equipment to mow or disc weed populations. Mechanical removal should dig or pull plants to remove the root, as remaining roots can produce new plants. If mechanical equipment is used, subsequent seeding will be conducted to re-establish a desirable vegetative cover that will stabilize the soils and slow the potential re-invasion of noxious weeds. Seed selection will be based on site-specific conditions and the appropriate seed mix identified for those conditions, as presented in the Reclamation Plan. Disking or other mechanical treatments that will disturb the soil surface within native habitats will be avoided.

Herbicide application is an effective means of reducing the size of noxious weed populations. Applications will be controlled to minimize the impacts on the surrounding vegetation. In areas of dense infestation, a broader application will be used and a follow-up seeding program implemented. Supplemental seeding will be based on the criteria in the Reclamation Plan. The timing of subsequent re-vegetation efforts will be based on the life of the selected herbicide. Treatment methods will be based on species-specific and area-specific conditions (e.g., proximity to water or riparian areas and time of year) and will be coordinated with the BLM through a Pesticide Use Proposal (PUP). If areas are not seeded

until the following spring because of weather or scheduling constraints, all annuals and undesirable vegetation that have become established will be eradicated before seeding.

Application of herbicides on public land is regulated and must be approved by the BLM, including the submission of the required information in a PUP regarding the target species, herbicide proposed, application rate, etc. Treatment windows are species-specific but generally include the spring growing season prior to flower bud formation or fall for species that germinate in the fall or are biennial or perennial plants that have an active growth period in the fall following summer dormancy.

Only herbicides that are approved by the BLM (Appendix B) will be applied to the identified weed infestations on BLM lands to reduce the spread or proliferation of weeds. Herbicides must be applied by qualified and/or licensed personnel and used in accordance with label directions. To minimize further disturbance, treatments should be conducted in conjunction with invasive weed surveys to the extent possible.

3.5 Post-Treatment Management

Post-treatment management will include post-treatment seeding and monitoring. Post-treatment seeding is necessary to establish desirable species in the void left by eradicating or reducing the noxious weed population. Without seeding, the area is a suitable seedbed for other nonnative, invasive species, and the entire process starts over. Seeding of the areas is just one step in post-treatment management. The desired species must also be managed to ensure they remain on site. Temporary wildlife/livestock exclusion measures or the use of unpalatable and grazing-resilient species should be considered.

Monitoring is described in the next section.

4.0 MONITORING

Monitoring has two objectives: identification of new infestations and evaluation of the effectiveness of treatment programs.

Biennially, starting the first year of operations, until the final release of revegetation, MNV will complete a noxious weed survey within the entire plan of operations boundary to ensure that all overland travel routes are monitored. MNV will then have a licensed contractor treat the noxious weeds as appropriate and as approved by the BLM. A report of the findings and

treatment method(s) will be sent to the BLM within 60 days after treatment. A PUP will be submitted to the BLM for approval prior to noxious weed treatment.

4.1 Construction and Operational Monitoring

MNV personnel will conduct monitoring of known infestation areas to monitor their containment and/or eradication. MNV will also conduct inspections of disturbed areas to determine if new infestations have occurred. This includes any new disturbance sites since the last inspection and all previously disturbed areas. While this monitoring can be combined with other permit monitoring, it must be performed in the spring when the noxious weeds have initiated growth but before they bloom. This schedule allows for sufficient time to implement a treatment program before seeds are produced and when the plants are susceptible to treatment options.

In addition to planned monitoring, incidental observations of any weed infestations made by MNV or contract personnel since the last inspection will be included in the monitoring report. Staff will conduct follow-up noxious weed surveys within the Project area until weed abatement and revegetation criteria are met. Informal visual assessments will be performed in all areas not involving active operations.

Data to be collected during monitoring events includes GPS or map location, the size of the infestation, the density of plants, any constraints for treatment (i.e., adjacent to springs or water, etc.), and, if treatment has been initiated: the success of desired species establishment after treatment. This information will be included in the plan updates and treatment plans. The new infestations will be mapped along with previous infestations to determine if any patterns of spread of the weeds can be determined.

4.2 Reclamation and Post-Reclamation Monitoring

Noxious weed surveys and weed control treatments will be conducted during the growing season following all reclamation activities. The surveys may be conducted concurrently with reclamation monitoring activities. Monitoring in the spring following reclamation seeding is recommended, and appropriate treatment should be conducted as needed. Controls will be considered successful when the extent and density of the infestations in the disturbance areas, by species, are not greater than the baseline conditions measured during surveys prior to Project construction.

Staff will reseed operations-related disturbance areas greater than 0.5 acres that are at risk for weed invasion, that are not involved within active Project operations, and that are not proposed to be under active operations in the future. If necessary, areas exhibiting noxious weeds will be treated with the application of an approved herbicide.

The control of noxious weeds is required before release of reclaimed and closed facilities.

5.0 HERBICIDE APPLICATION, HANDLING, SPILLS, AND CLEANUP

5.1 Herbicide Application Handling

Before application, MNV or its contractor will submit a PUP to BLM and obtain any required permits. Permits may contain additional terms and conditions that go beyond the scope of this Plan. A licensed contractor will perform the application in accordance with applicable laws and regulations and permit stipulations.

All herbicide applications must follow United States Environmental Protection Agency label instructions. Application of herbicides will be suspended when any of the following conditions exists:

- Wind velocity exceeds 6 miles per hour (mph) during application of liquids or 15 mph during application of granular herbicides;
- Snow or ice covers the foliage of noxious weeds; or
- Precipitation is occurring or is imminent.

Vehicle-mounted sprayers (e.g., handgun, boom, and injector) will be used in open areas that are readily accessible by vehicle. Hand application methods (e.g., backpack spraying, hose, and wand spraying) that target individual plants will be used to treat small or scattered weed populations in rough terrain. Calibration checks of equipment will be conducted at the beginning of spraying and periodically to ensure that proper application rates are achieved.

Herbicides will be transported to the project site daily with the following provisions:

- Only the quantity needed for that day's work will be transported;
- Concentrate will be transported in approved containers only and in a manner that will prevent tipping or spilling, and in a location that is isolated from the vehicle's driving compartment, food, clothing, and safety equipment;

- Mixing will be done off-site, over a drip catching device and at a distance greater than 200 feet from open or flowing water, wetlands, or other sensitive resources. No herbicides will be applied at these areas unless authorized by appropriate regulatory agencies; and
- All herbicide equipment and containers will be inspected for leaks daily. Disposal of spent containers will be in accordance with the herbicide label.

5.2 Herbicide Spills and Cleanup

All reasonable precautions will be taken to avoid herbicide spills. In the event of a spill, cleanup will be immediate. Contractors will keep spill kits in their vehicles and in herbicide storage areas to allow for quick and effective response to spills. Items to be included in the spill kit are:

- Protective clothing and gloves;
- Absorptive clay, "kitty litter," or other commercial adsorbent; and
- Plastic bags and bucket, shovel, fiber brush and screw-in handle, dustpan, caution tape, highway flares (use on established roads only), and detergent.
- Response to an herbicide spill will vary with the size and location of the spill, but general procedures include:
- BLM notification, traffic control;
- Dressing the clean-up team in protective clothing;
- Stopping the leaks;
- Containing the spilled material;
- Cleaning up and removing the spilled herbicide and contaminated adsorptive material and soil; and
- Transporting the spilled pesticide and contaminated material to an authorized disposal site.

5.3 Worker Safety and Spill Reporting

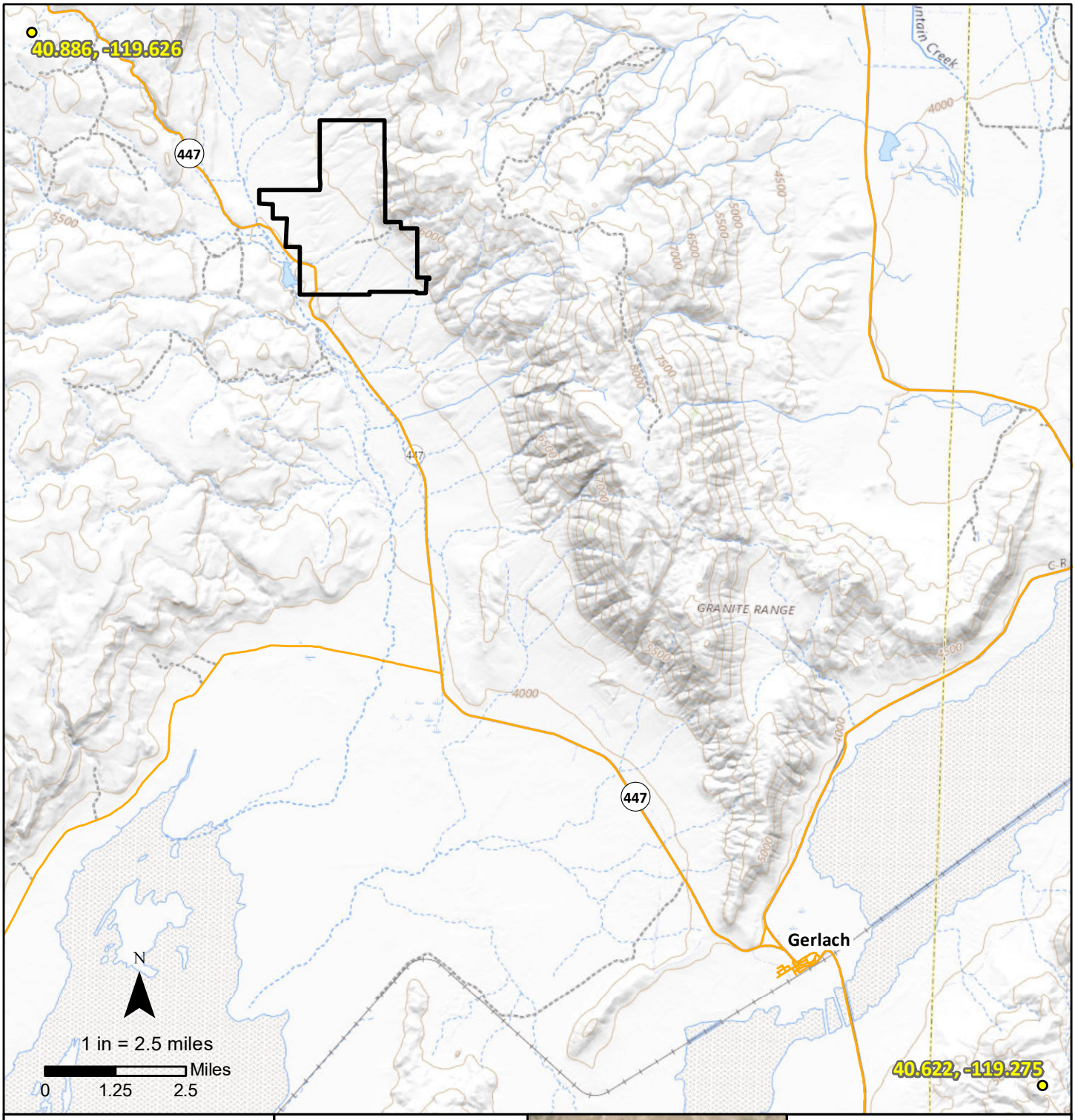
All herbicide contractors will be state licensed to apply pesticides (and certified if restricted use herbicides are used) and obtain and have readily available copies of the appropriate material safety data sheets for the herbicides used. All herbicide spills will be reported in accordance with applicable laws and requirements.

6.0 REFERENCES

Cedar Creek. 2022. 2022 Biological Baseline Report for the Mtn View Exploration Project. October.

NDA. 2022. Nevada Noxious Weed Profiles. http://agri.nv.gov/Plant/Noxious_Weeds/Noxious_Weed_List/ Accessed December 2022.

Figures

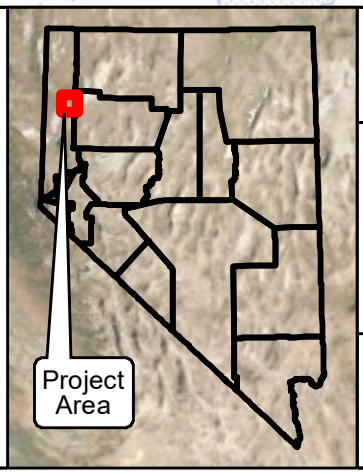


Coordinate System: NAD 1983
UTM Zone 11N
Projection: Transverse Mercator
Datum: North American 1983
Created on August 5, 2022
Service Layer Credit: USGS The National Map (ESRI Basemap)

Made in accordance with the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program, as amended on February 10, 2016, by:
Cedar Creek Associates, Inc
PO Box 272150
Fort Collins, CO 80527

Map Legend

- Mountain View Survey Area
- Road

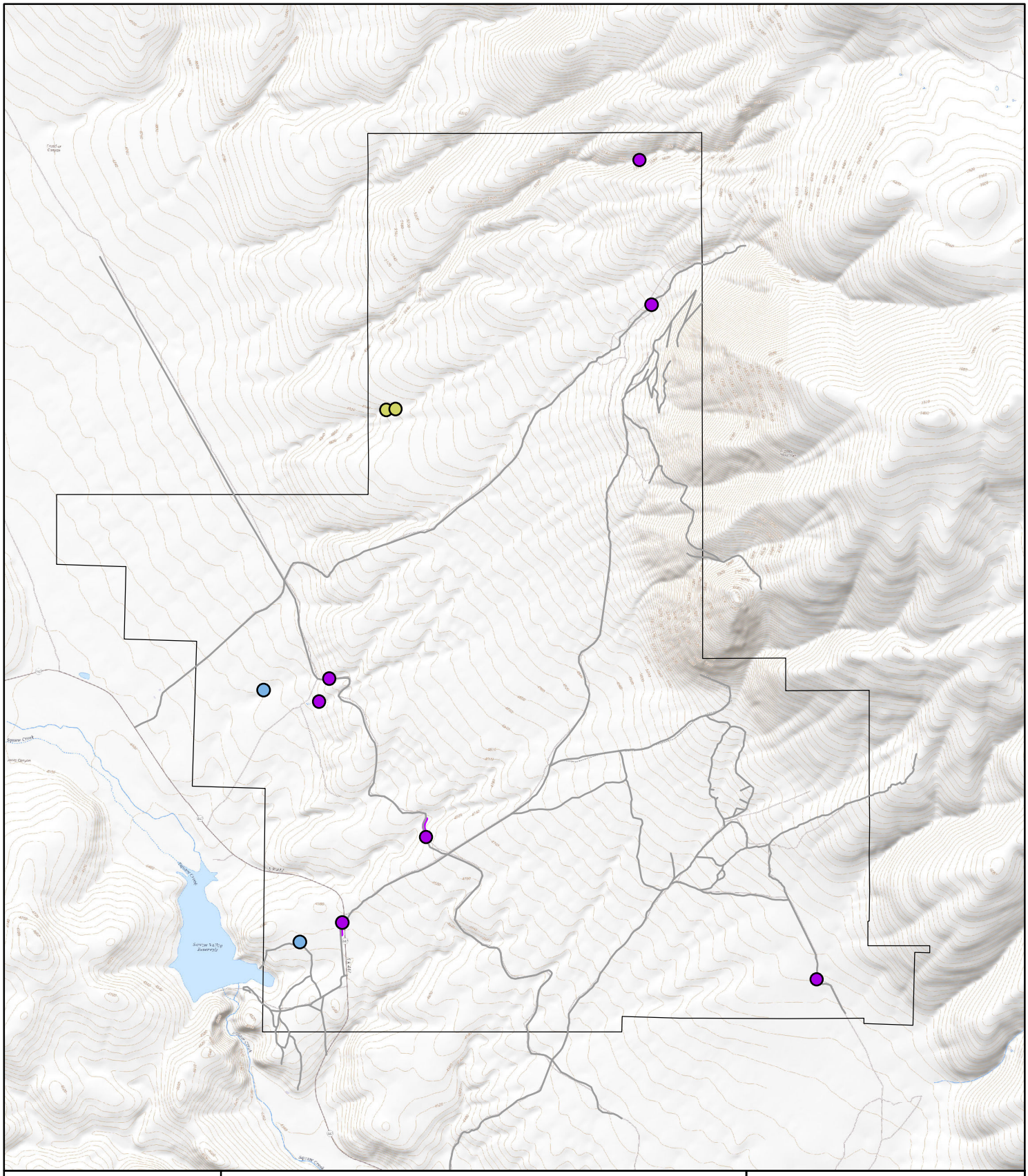


Mtn View Project

Figure 1

Project Location

CEDAR CREEK ASSOCIATES, INC.



Map Legend

- Roads
- Mtn View Baseline Study Area

Noxious Species

- Medusahead
- R Knapweed
- Whitetop

CEDAR CREEK ASSOCIATES, INC.

Mtn View Project

Figure 2
Baseline Noxious Weed Inventory

Coordinate System: UTM NAD 83 Z11

Tables

Table 1. Baseline Noxious Weed Infestations in the Study Area

Common Name	Scientific name	Report ID	Latitude	Longitude	Area of Infestation (m2)
Medusahead	Taeniatherum caput-medusae	N-01-1	40.825095	-119.53086	10
Medusahead	Taeniatherum caput-medusae	N-11-1	40.837608	-119.533721	10000
Russian knapweed	Acroptilon repens	N-12-1a	40.851751	-119.526190	510
Whitetop	Cardaria draba	N-09-1	40.837124	-119.530054	300
Whitetop	Cardaria draba	N-10-1	40.864582	-119.510044	10
Whitetop	Cardaria draba	N-02-1	40.82554	-119.528161	102
Whitetop	Cardaria draba	N-03-1	40.826143	-119.528125	100
Whitetop	Cardaria draba	N-04-1	40.857386	-119.508993	10
Whitetop	Cardaria draba	N-05-1	40.823978	-119.496873	5
Whitetop	Cardaria draba	N-06-1	40.830517	-119.522772	10
Whitetop	Cardaria draba	N-07-1	40.830727	-119.522841	820
Whitetop	Cardaria draba	N-08-1	40.838286	-119.529428	10
				Total Acres White top:	0.34
				Total Acres Medusahead:	2.50
				Total Acres Russian knapweed:	0.13

Appendix A NRS 555.010 Designation and Categorization of Noxious Weeds

NRS 555.010 Designation and Categorization of Noxious Weeds

Category A weeds are weeds that are generally not found or that are limited in distribution throughout the State. Such weeds are subject to:

(a) Active exclusion from the State and active eradication wherever found.

(b) Active eradication from the premises of a dealer of nursery stock.

Category B weeds are weeds that are generally established in scattered populations in some counties of the State. Such weeds are subject to:

(a) Active exclusion where possible.

(b) Active eradication from the premises of a dealer of nursery stock.

Category C weeds are weeds that are generally established and generally widespread in many counties of the State. Such weeds are subject to active eradication from the premises of a dealer of nursery stock.

The following weeds are designated noxious weeds by the Nevada Department of Agriculture (list as of December 2022):

Category A Weeds	
African rue	*Peganum harmala*
Austrian fieldcress	*Rorippa austriaca*
Black henbane	*Hysocyamus niger*
Camelthorn	*Alhagi pseudalhagi*
Common crupina	*Crupina vulgaris*
Crimson fountain grass	Pennisetum setaceum
Common St. Johnswort	*Hypericum perforatum*
Dalmatian toadflax	*Linaria dalmatica*
Dyer's woad	*Isatis tinctoria*
Eurasian watermilfoil	*Myriophyllum spicatum*
Giant reed	*Arundo donax*
Giant salvinia	*Salvinia molesta*
Goatsrue	*Galega officinalis*
Houndstongue	*Cynoglossum officinale*
Hydrilla	*Hydrilla verticillata*
Iberian starthistle	*Centaurea iberica*

Category A Weeds (continued)	
Malta starthistle	*Centaurea melitensis*
Mayweed chamomile	*Anthemis cotula*
Mediterranean sage	*Salvia aethiopis*
Purple loosestrife	*Lythrum salicaria, Lythrum virgatum*and their cultivars
Purple starthistle	*Centaurea calcitrapa*
Rush skeletonweed	*Chondrilla juncea*
Sow thistle	*Sonchus arvensis*
Spotted knapweed	*Centaurea maculosa*
Squarrose knapweed	*Centaurea virgata*
Sulfur cinquefoil	*Potentilla recta*
Swainsonpea	Sphaerophysa salsula
Syrian bean caper	*Zygophyllum fabago*
Yellow starthistle	*Centaurea solstitialis*
Yellow toadflax	*Linaria vulgaris*
Category B Weeds	
African mustard	Brassica tournefortii
Diffuse knapweed	*Centaurea diffusa*
Leafy spurge	*Euphorbia esula*
Horsenettle	Solanum carolinense
Medusahead	*Taeniatherum caput-medusae*
Musk thistle	*Carduus nutans*
Russian knapweed	*Acroptilon repens*
Scotch thistle	*Onopordum acanthium*
Silverleaf nightshade	*Solanum elaeagnifolium*
Category C Weeds	
Canada thistle	*Cirsium arvense*
Hoary cress	*Cardaria draba*
Johnsongrass	*Sorghum halepense*
Perennial pepperweed	*Lepidium latifolium*
Poison Hemlock	*Conium maculatum*
Puncture vine	*Tribulus terrestris*
Salt cedar tamarisk	*Tamarix* spp.
Water Hemlock	*Cicuta maculata*

Appendix B BLM Approved Herbicides

Herbicides Formulations Approved for Use on Lands The BLM Administers in the 17 Western States

Update: April 4, 2019

Restrictions associated with exisitng Environmental Impact Statements and individual Environmental Assessments (EA) at the present time, may restrict the use of individual herbicide active ingredients allowed for a particular project within that state. Refer to current EAs prior to selecting the active ingredient(s) and subsequent formulation(s).

Refer to the complete label prior to considering the use of any herbicide formulation. Just because it has a Federal registration, it may not be registered in a particular State, for example California. Label changes can also impact the intended use through, such things as, creation or elimination of Special Local Need (SLN) or 24 (C) registrations, changes in application sites, rates and timing of application, county restrictions, etc.

ACTIVE INGREDIENT	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Aminopyralid	Milestone	Dow AgroSciences	62719-519
Aminopyralid + 2,4-D	ForeFront HL	Dow AgroSciences	62719-630
	GrazonNext HL	Dow AgroSciences	62719-628
Aminopyralid + Clopyralid	Sendero	Dow AgroSciences	62719-645
Aminopyralid + Metsulfuron methyl	Chaparral	Dow AgroSciences	62719-597
	Opensight	Dow AgroSciences	62719-597
Aminopyralid + Triclopyr	Capstone	Dow AgroSciences	62719-572
Bromacil	Alligare Bromacil 80	Alligare, LLC	81927-4
	Ceannard Bromacil 80DF	Ceannard, Inc.	58035-19
	Hyvar X	Bayer Environmental Science	432-1546
	Hyvar X	DuPont Crop Protection	352-287
	Hyvar X-L	Bayer Environmental Science	432-1548
	Hyvar X-L	DuPont Crop Protection	352-346
Bromacil + Diuron	Alligare Bromacil/Diuron 40/40	Alligare, LLC	81927-3
	Ceannard Diuron/Bromacil 80 DF	Ceannard, Inc.	58035-18
	DiBro 2+2	Nufarm Americas Inc.	228-227
	DiBro 4+2	Nufarm Americas Inc.	228-386
	DiBro 4+4	Nufarm Americas Inc.	228-235
	Krovar I DF	Bayer Environmental Science	432-1551
	Krovar I DF	DuPont Crop Protection	352-505
	Weed Blast 4G	SSI Maxim	34913-19
	Weed Blast Res. Weed Cont.	Loveland Products Inc.	34704-576

ACTIVE INGREDIENT	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Chlorsulfuron	Alligare Chlorsulfuron 75	Alligare, LLC	81927-43
	Chlorsulfuron E-Pro 75 WDG	Nufarm Americas Inc.	79676-72
	Nufarm Chlorsulf SPC 75 WDG Herbicide	Nufarm Americas Inc.	228-672
	Telar XP	Bayer Environmental Science	432-1561
	Telar XP	DuPont Crop Protection	352-654
Clopyralid	Alligare Clopyralid 3	Alligare, LLC	81927-14
	CleanSlate	Nufarm Americas Inc.	228-491
	Pyramid R&P	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-94
	Reclaim	Dow AgroSciences	62719-83
	Spur	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-89
	Stinger	Dow AgroSciences	62719-73
	Transline	Dow AgroSciences	62719-259
Clopyralid + 2, 4-D	Alligare Cody Herbicide	Alligare, LLC	81927-28
	Commando	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-92
	Curtail	Dow AgroSciences	62719-48
	Cutback	Nufarm Americas Inc.	71368-72
2, 4-D	2,4-D 4# Amine Weed Killer	UAP-Platte Chem. Co.	34704-120
	2,4-D Amine	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-72
	2,4-D Amine 4	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-19
	2,4-D Amine 4	Helena Agri-Enterprises, LLC (Helena Chemical Company)	42750-19-5905
	2,4-D LV 4	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-15
	2,4-D LV 6 Ester	Nufarm Americas Inc.	228-95
	2,4-D LV4	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-90
	2,4-D LV 6	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-20
	2,4-D LV6	Helena Agri-Enterprises, LLC (Helena Chemical Company)	42750-20-5905
	2,4-D LV6	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-93
	Alliagre 2,4-D Amine	Alligare, LLC	81927-38
	Alligare 2,4-D LV 6	Alligare, LLC	81927-39
	Aqua-Kleen	Nufarm Americas Inc.	71368-4
	Aqua-Kleen	Nufarm Americas Inc.	228-378
	Barrage HF	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-529
	Barrage LV Ester	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-504
	Base Camp Amine 4	Wilbur-Ellis Co., LLC (Wilbur-Ellis Co.)	71368-1-2935
	Base Camp LV6	Wilbur-Ellis Co., LLC (Wilbur-Ellis Co.)	2935-553
	Broadrange 55	Wilbur-Ellis Co., LLC (Wilbur-Ellis Co.)	2217-813-2935

ACTIVE INGREDIENT	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
2,4-D - continued	Clean Amine	Loveland Products Inc.	34704-120
	Clean Crop Amine 4	UAP-Platte Chem. Co.	34704-5 CA
	Clean Crop Low Vol 6 Ester	UAP-Platte Chem. Co.	34704-125
	Clean Crop LV-4 ES	UAP-Platte Chem. Co.	34704-124
	Cornbelt 4 lb. Amine	Van Diest Supply Co.	11773-2
	Cornbelt 4# LoVol Ester	Van Diest Supply Co.	11773-3
	Cornbelt 6# LoVol Ester	Van Diest Supply Co.	11773-4
	D-638	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-36
	Esteron 99C	Nufarm Americas Inc.	62719-9-71368
	Five Star	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-49
	Formula 40	Nufarm Americas Inc.	228-357
	Freelexx	Dow AgroSciences	62719-634
	HardBall	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-549
	Hi-Dep	PBI Gordon Corp.	2217-703
	Low Vol 4 Ester Weed Killer	Loveland Products Inc.	34704-124
	Low Vol 6 Ester Weed Killer	Loveland Products Inc.	34704-125
	Opti-Amine	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-501
	Platoon	Nufarm Americas Inc.	228-145
	Rugged	WinField-United (WinField Solutions, LLC)	1381-247
	Saber	Loveland Products Inc.	34704-803
	Salvo	Loveland Products Inc.	34704-609
	Salvo LV Ester	UAP-Platte Chem. Co.	34704-609
	Savage DS	Loveland Products Inc.	34704-606
	Savage DS	UAP-Platte Chem. Co.	34704-606
	Shredder 2,4-D LV4	WinField-United (WinField Solutions, LLC)	1381-102
	Shredder Amine 4	WinField-United (WinField Solutions, LLC)	1381-103
	Solution Water Soluble	Nufarm Americas Inc.	228-260
	Solve 2,4-D	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-22
	Unison	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-542
	Weedar 64	Nufarm Americas Inc.	71368-1
	WEEDestroy AM-40	Nufarm Americas Inc.	228-145
	Weedone LV-4	Nufarm Americas Inc.	228-139-71368
	Weedone LV-4 Solventless	Nufarm Americas Inc.	71368-14
	Weedone LV-6	Nufarm Americas Inc.	71368-11
	Whiteout 2,4-D	Loveland Products, Inc.	34704-1032
Dicamba	Alligare Cruise Control	Alligare, LLC	42750-40-81927
	Alligare Dicamba 4 Herbicide	Alligare, LLC	81927-55
	Banvel	Arysta LifeScience N.A. Corp.	66330-276
	Clarity	BASF Corporation	7969-137
	Diablo	Nufarm Americas Inc.	228-379
	Dicamba DMA	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-40

ACTIVE INGREDIENT	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Dicamba - continued	Kam-Ba	Drexel Chemical Company	19713-624
	Rifle	Loveland Products Inc.	34704-861
	Sterling Blue	WinField-United (WinField Solutions, LLC)	7969-137-1381
	Topeka	Rotam North America, Inc.	83100-34-83979
	Vanquish	Syngenta	100-884
	Vanquish Herbicide	Nufarm Americas Inc.	228-397
	Vision	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-576
Dicamba + 2, 4-D	Alligare Dicamba + 2,4-D DMA	Alligare, LLC	81927-42
	Brash	WinField-United (WinField Solutions, LLC)	1381-202
	Brush-Rhap	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-568
	Cimarron MAX - Part B	Bayer Environmental Science	432-1555
	Cimarron MAX - Part B	DuPont Crop Protection	352-615
	KambaMaster	Nufarm Americas Inc.	71368-34
	Latigo	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-564
	Outlaw	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-574
	Range Star	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-55
	Rifle-D	Loveland Products Inc.	34704-869
	Veteran 720	Nufarm Americas Inc.	228-295
	Weedmaster	Nufarm Americas Inc.	71368-34
Dicamba + Diflufenzopyr	Distinct	BASF Corporation	7969-150
	Overdrive	BASF Corporation	7969-150
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management* Lands in 17 Western *States Programmatic Environmental Impact Statement (PEIS), the aerial application of this herbicide* is prohibited.			
Diquat	Alligare Diquat Herbicide	Alligare, LLC	81927-43
	Diquat E-AG 2L	Nufarm Americas Inc.	79676-75
	Diquat E-Pro 2L	Nufarm Americas Inc.	79676-75
	Diquat SPC 2L Herbicide	Nufarm Americas Inc.	228-675
	Nufarm Diquat 2L Herbicide	Nufarm Americas Inc.	228-675
	Reward	Syngenta Professional Products	100-1091
Diuron	Alligare Diuron 4L	Alligare, LLC	81927-44
	Alligare Diuron 80DF	Alligare, LLC	81927-12
	Ceannard Diuron 80DF	Ceannard, Inc.	58035-16
	Direx 4L	DuPont Crop Protection	352-678
	Direx 4L	Makhteshim Agan of N. A. (ADAMA)	66222-54
	Diuron 4L	Drexel Chemical Company	19713-36

ACTIVE INGREDIENT	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Diuron - continued	Diuron 4L	Loveland Products Inc.	34704-854
	Diuron 4L	Makhteshim Agan of N. A. (ADAMA)	66222-54
	Diuron 80	Drexel Chemical Company	19713-274
	Diuron 80 WDG	Loveland Products Inc.	34704-648
	Diuron 80DF	WinField-United (WinField Solutions, LLC)	9779-318
	Diuron 80WDG	UAP-Platte Chem. Co.	34704-648
	Karmex DF	DuPont Crop Protection	352-692
	Karmex DF	Makhteshim Agan of N. A. (ADAMA)	66222-51
	Karmex IWC	DuPont Crop Protection	352-692
	Karmex XP	DuPont Crop Protection	352-692
	Parrot 4L	Makhteshim Agan of N. A. (ADAMA)	66222-54
	Parrot DF	Makhteshim Agan of N. A. (ADAMA)	66222-51
Fluridone	Alligare Fluridone	Alligare, LLC	81927-45
	Avast!	SePRO	67690-30
	Fluridone 4L	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-280
	Sonar AS	SePRO	67690-4
	Sonar Precision Release	SePRO	67690-12
	Sonar Q	SePRO	67690-3
	Sonar SRP	SePRO	67690-3
Fluroxypyr	Alligare Flagstaff	Alligare, LLC	81927-61
	Alligare Fluroxypyr	Alligare, LLC	66330-385-81927
	Comet Selective	Nufarm Americas Inc.	71368-87
	Vista XRT	Dow AgroSciences	62719-586
Fluroxypyr + 2,4-D + Dicamba	E-2 Herbicide	Nufarm Americas Inc.	228-442
Fluroxypyr + Clopyralid	Truslate Selective Herbicide	Nufarm Americas Inc.	71368-86
Fluroxypyr + Picloram	Alligare Triumph XTR Herbicide	Alligare , LLC	81927-64
	Surmount	Dow AgroSciences	62719-480
	Trooper Pro	Nufarm Americas Inc.	228-599
Fluroxypyr + Triclopyr	Alligare Cleargraze Pasture Herbicide	Alligare, LLC	81927-65
	PastureGard	Dow AgroSciences	62719-637
Glyphosate	Accord Concentrate	Dow AgroSciences	62719-324
	Accord SP	Dow AgroSciences	62719-322
	Accord XRT	Dow AgroSciences	62719-517
	Accord XRT II	Dow AgroSciences	62719-556
	Alligare Dryphosate 75SG	Alligare, LLC	81927-60
	Alligare Glyphosate 4 PLUS	Alligare, LLC	81927-9
	Alligare Glyphosate 5.4	Alligare, LLC	81927-8
	Aqua Neat	Nufarm Americas Inc.	228-365

ACTIVE INGREDIENT	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Glyphosate - continued	Aqua Star	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-59
	Aquamaster	Monsanto	524-343
	AquaPro Aquatic Herbicide	SePRO Corporation	62719-324-67690
	Buccaneer	Tenkoz	55467-10
	Buccaneer Plus	Tenkoz	55467-9
	Credit Xtreme	Nufarm Americas Inc.	71368-81
	Foresters	Nufarm Americas Inc.	228-381
	Gly Star Gold	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-61
	Gly Star Original	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-60
	Gly Star Plus	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-61
	Gly Star Pro	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-61
	Gly-4	Universal Crop Protection Alliance	42750-60-72693
	Gly-4 Plus	Universal Crop Protection Alliance	72693-1
	Gly-4 Plus	Universal Crop Protection Alliance	42750-61-72693
	GlyphoMate 41	PBI/Gordon Corporation	2217-847
	Glypro	Dow AgroSciences	62719-324
	Glypro Plus	Dow AgroSciences	62719-322
	Honcho	Monsanto	524-445
	Honcho Plus	Monsanto	524-454
	Imitator Aquatic	Drexel Chemical Company	19713-623
	Imitator DA	Drexel Chemical Company	19713-586
	Imitator Plus	Drexel Chemical Company	19713-526
	KleenUp Pro	Loveland Products, Inc.	34704-890
	Mad Dog Plus	Loveland Products, Inc.	34704-890
	Makaze	Loveland Products, Inc.	34704-890
	Mirage	Loveland Products Inc.	34704-889
	Mirage Herbicide	UAP-Platte Chem. Co.	524-445-34704
	Mirage Plus	Loveland Products Inc.	34704-890
	Rattler	Helena Agri-Enterprises, LLC (Helena Chemical Company)	524-445-5905
	Razor	Nufarm Americas Inc.	228-366
	Razor Pro	Nufarm Americas Inc.	228-366
	Rodeo	Dow AgroSciences	62719-324
	Roundup Custom	Monsanto	524-343
	Roundup Original	Monsanto	524-445
	Roundup Original II	Monsanto	524-454
	Roundup Original II CA	Monsanto	524-475
	Roundup PROMAX	Monsanto	524-579
	Roundup PRO	Monsanto	524-475
	Roundup PRO Concentrate	Monsanto	524-529
	Roundup PRO Dry	Monsanto	524-505
	Showdown	Helena Agri-Enterprises, LLC (Helena Chemical Company)	71368-25-5905

ACTIVE INGREDIENT	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Glyphosate + 2, 4-D	Campaign	Monsanto	524-351
	Imitator + 2,4-D	Drexel Chemical Company	19713-635
	Landmaster BW	Albaugh, LLC (Albuagh, Inc/Agri Star)	42570-62
	Landmaster BW	Monsanto	524-351
Hexazinone	Pronone 10G	Pro-Serve	33560-21
	Pronone 25G	Pro-Serve	33560-45
	Pronone MG	Pro-Serve	33560-21
	Pronone Power Pellet	Pro-Serve	33560-41
	Velosa	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5905-579
	Velpar DF	DuPont Crop Protection	352-581
	Velpar DF VU	Bayer Environmental Science	432-1576
	Velpar L	DuPont Crop Protection	352-392
	Velpar L VU	Bayer Environmental Science	432-1573
	Velpar ULW	DuPont Crop Protection	352-450
Hexazinone + Sulfometuron methyl	Oustar	Bayer Environmental Science	432-1553
	Oustar	DuPont Crop Protection	352-603
	Westar	Bayer Environmental Science	432-1558
	Westar	DuPont Crop Protection	352-626
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management* Lands in 17 Western *States Programmatic Environmental Impact Statement (PEIS), the aerial application of this herbicide* is prohibited.			
Imazapic	Alligare Panoramic 2SL	Alligare, LLC	66222-141-81927
	Nufarm Imazapic 2SL	Nufarm Americas Inc.	71368-99
	Open Range G	Wilbur-Ellis Co., LLC (Wilbur-Ellis Co.)	2935-557
	Plateau	BASF Corporation	241-365
Imazapyr	Alligare Ecomazapyr 2SL	Alligare, LLC	81927-22
	Alligare Imazapyr 4SL	Alligare, LLC	81927-24
	Alligare Rotary 2 SL	Alligare, LLC	
	Arsenal	BASF Corporation	241-346
	Arsenal Applicators Conc.	BASF Corporation	241-299
	Arsenal PowerLine	BASF Corporation	241-431
	Chopper	BASF Corporation	241-296
	EZ-JECT Copperhead Herbicide Shells	EZ-JECT, Inc.	83220-2
	Habitat	BASF Corporation	241-426
	Habitat Herbicide	SePRO	241-426-67690
	Polaris	Nufarm Americas Inc.	228-534
	Polaris AC	Nufarm Americas Inc.	241-299-228
	Polaris AC	Nufarm Americas Inc.	228-480
	Polaris AC Complete	Nufarm Americas Inc.	228-570

ACTIVE INGREDIENT	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Imazapyr - continued	Polaris AQ	Nufarm Americas Inc.	241-426-228
	Polaris Herbicide	Nufarm Americas Inc.	241-346-228
	Polaris RR	Nufarm Americas Inc.	241-273-228
	Polaris SP	Nufarm Americas Inc.	228-536
	Polaris SP	Nufarm Americas Inc.	241-296-228
	SSI Maxim Arsenal 0.5G	SSI Maxim Co., Inc.	34913-23
	SSI Maxim Arsenal 5.0 G	SSI Maxim Co., Inc.	34913-24
	Stalker	BASF Corporation	241-398
Imazapyr + Diuron	Alligare Mojave 70 EG	Alligare, LLC	81927-25
	Imazuron	Nufarm Americas Inc.	228-654
	Sahara DG	BASF Corporation	241-372
	SSI Maxim Topsite 2.5G	SSI Maxim Co., Inc.	34913-22
Imazapyr + Metsulfuron methyl	Lineage Clearstand	Bayer Environmental Science	432-1578
	Lineage Clearstand	DuPont Crop Protection	352-766
Imazapyr + Sulfometuron methyl +	Lineage HWC	Bayer Environmental Science	432-1577
Metsulfuron methyl	Lineage HWC	DuPont Crop Protection	352-765
	Lineage Prep	Bayer Environmental Science	432-1579
	Lineage Prep	DuPont Crop Protection	352-767
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management* Lands in 17 Western *States Programmatic Environmental Impact Statement (PEIS), the aerial application of this herbicide* is prohibited.			
Metsulfuron methyl	Alligare MSM 60	Alligare, LLC	81927-7
	AmTide MSM 60DF Herbicide	AmTide, LLC	83851-3
	Cimarron MAX - Part A	Bayer Environmental Science	432-1555
	Cimarron MAX - Part A	DuPont Crop Protection	352-615
	Escort XP	Bayer Environmental Science	432-1549
	Escort XP	DuPont Crop Protection	352-439
	Patriot	Nufarm Americas Inc.	228-391
	PureStand	Nufarm Americas Inc.	71368-38
	Rometsol	Rotam North America, Inc.	831000-2-83979
Metsulfuron methyl + Chlorsulfuron	Cimarron Plus	Bayer Environmental Science	432-1572
	Cimarron Plus	DuPont Crop Protection	352-670
	Cimarron X-tra	DuPont Crop Protection	352-669
Picloram	Alligare Picloram 22K	Alligare, LLC	81927-18
	Grazon PC	Dow AgroSciences	62719-181
	OutPost 22K	Dow AgroSciences	62719-6
	Tordon 22K	Dow AgroSciences	62719-6
	Tordon K	Dow AgroSciences	62719-17

ACTIVE INGREDIENT	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Picloram - continued	Triumph 22K	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-79
	Triumph K	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-81
	Trooper 22K	Nufarm Americas Inc.	228-535
Picloram + 2, 4-D	Alligare Picloram + D	Alligare, LLC	81927-16
	Graslan L	Dow AgroSciences	62719-655
	Grazon P+D	Dow AgroSciences	62719-182
	GunSlinger	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-80
	HiredHand P+D	Dow AgroSciences	62719-182
	Pathway	Dow AgroSciences	62719-31
	Tordon 101 Mixture	Dow AgroSciences	62719-5
	Tordon RTU	Dow AgroSciences	62719-31
	Trooper P + D	Nufarm Americas Inc.	228-530
Picloram + 2, 4-D + Dicamba	Trooper Extra	Nufarm Americas Inc.	228-586
Rimsulfuron	Alligare Laramie 25DF	Alligare, LLC	81927-57
	Hinge	Rotam Borth America, Inc.	83100-40-83979
	Matrix SG	Dupont Crop Protection	352-768
Sulfometuron methyl	Alligare SFM 75	Alligare, LLC	81927-26
	Oust XP	Bayer Environmenatl Science	432-1552
	Oust DF	DuPont Crop Protection	352-401
	Oust XP	DuPont Crop Protection	352-601
	Spyder	Nufarm Americas Inc.	228-408
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management* Lands in 17 Western *States Programmatic Environmental Impact Statement (PEIS), the aerial application of this herbicide* is prohibited.			
Sulfometuron methyl + Chlorsulfuron	Landmark XP	Bayer Environmental Science	432-1560
	Landmark XP	DuPont Crop Protection	352-645
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ACTIVE INGREDIENT	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Sulfometuron methyl + Metsulfuron methyl	Alligare SFM Extra	Alligare, LLC	81927-5
	Oust Extra	Bayer Environmental Science	432-1557
	Oust Extra	DuPont Crop Protection	352-622
	Spyder Extra Selective	Nufarm Americas Inc.	228-690
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management* Lands in 17 Western *States Programmatic Environmental Impact Statement (PEIS), the aerial application of this herbicide* is prohibited.			
Tebuthiuron	Alligare Tebuthiuron 20 P	Alligare, LLC	81927-41
	Alligare Tebuthiuron 80 WG	Alligare, LLC	81927-37
	Spike 20P	Dow AgroSciences	62719-121
	Spike 80DF	Dow AgroSciences	62719-107
	SpraKil S-5 Granules	SSI Maxim Co., Inc.	34913-10
Tebuthiuron + Diuron	SpraKil SK-13 Granular	SSI Maxim Co., Inc.	34913-15
	SpraKil SK-26 Granular	SSI Maxim Co., Inc.	34913-16
Triclopyr	Alligare Boulder 6.3	Alligare, LLC	81927-54
	Alligare Triclopry 4	Alligare, LLC	81927-11
	Alligare Triclopyr 3	Alligare, LLC	81927-13
	Element 3A	Dow AgroSciences	62719-37
	Element 4	Dow AgroSciences	62719-40
	Forestry Garlon XRT	Dow AgroSciences	62719-553
	Garlon 3A	Dow AgroSciences	62719-37
	Garlon 4	Dow AgroSciences	62719-40
	Garlon 4 Ultra	Dow AgroSciences	62719-527
	Pathfinder II	Dow AgroSciences	62719-176
	Relegate	Nufarm Americas Inc.	228-521
	Relegate RTU	Nufarm Americas Inc.	228-522
	Remedy	Dow AgroSciences	62719-70
	Remedy Ultra	Dow AgroSciences	62719-552
	Renovate 3	SePRO Corporation	62719-37-67690
	Renovate OTF	SePRO Corporation	67690-42
	Tahoe 3A	Nufarm Americas Inc.	228-520
	Tahoe 4E	Nufarm Americas Inc.	228-385
	Tahoe 4E Herbicide	Nufarm Americas Inc.	228-517
	Triclopyr RTU	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-173
	Trycera	Helena Agri-Enterprises, LLC (Helena Chemical Company)	5906-580
	Vastlan	Dow AgroSciences	62719-687

ACTIVE INGREDIENT	TRADE NAME	MANUFACTURER	EPA REG. NUMBER
Triclopyr + 2, 4-D	Alligare Everett	Alligare, LLC	81927-29
	Aquasweep	Nufarm Americas Inc.	228-316
	Candor	Nufarm Americas Inc.	228-565
	Crossbow	Dow AgroSciences	62719-260
Triclopyr + Clopyralid	Alligare Prescott Herbicide	Alligare, LLC	81927-30
	Brazen	Nufarm Americas Inc.	228-564
	Redeem R&P	Dow AgroSciences	62719-337