Thacker Pass Project

Stormwater Pollution Prevention Plan

July 2019

Submitted to:

Bureau of Land Management

Winnemucca District

Humboldt River Field Office

5100 East Winnemucca Boulevard

Winnemucca, Nevada 89445

Submitted by:

LithiumNevada

Lithium Nevada Corporation

3685 Lakeside Drive

Reno, Nevada 89509

Contact: Edward (Ted) Grandy, VP Legal and Regulatory Affairs

Table of Contents

List of Tables

List of Figures

List of Acronyms

AJD	Approved Jurisdictional Determination
BLM	Bureau of Land Management
BMP	Best Management Practice
BSDW	Bureau of Safe Drinking Water
CERCLA	Comprehensive Environmental Response, Compensation, Liability, and Recovery Act
CFR	Code of Federal Regulations
CTFS	Clay Tailings Filter Stack
CWA	Clean Water Act
GC	geochemical constituents
gpm	gallons per minute
HDPE	high-density polyethylene
KVCM	Kings Valley Clay Mine
LNC	Lithium Nevada Corporation
M CY	million cubic yards
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NOI	Notice of Intent
POO	Plan of Operations
Project	Thacker Pass Project
ROM	run-of-mine
SWPPP	Stormwater Pollution Prevention Plan
TSS	total suspended solids
U.S.	United States
USACE	United States Army Corps of Engineers
WPCP	Water Pollution Control Permit
WRSF	waste rock storage facility

1 Introduction and Scope

Lithium Nevada Corporation (LNC) is proposing to develop the Thacker Pass Project (Project). The Project is located in northern Nevada within Humboldt County, approximately 20 miles west-northwest of Orovada, and 62 miles north-northwest of Winnemucca (Figure 1).

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared to provide an overview of site conditions, facilities, potential on-site impact sources to natural drainages from stormwater, and Best Management Practices (BMPs) to reduce or mitigate potential impacts and migration.

A General Permit for Stormwater Discharges Associated with Industrial Activity from Metals Mining Activities (Stormwater General Permit) is not required of the Project from the State of Nevada Division of Environmental Protection (NDEP) because there are no Waters of the State of Nevada that meet the definition of Waters of the United States (U.S.) located within the Project area. This was established in the United States Army Corps of Engineers' (USACE) February 2019 Approved Jurisdictional Determination (AJD) (see Corps File No. SPK-2011-01263 [February 8, 2019]). This SWPPP was prepared nevertheless to guide the identification of stormwater pollution sources and the reduction of their impacts on local drainages in accordance with the 2013 General Permit NVR300000 (NDEP 2013).

1.1 Site Location

The Project area, defined as the proposed Plan of Operations (POO) boundary (Figure 1), is located between Kings Valley to the west, the Montana Mountains to the north, and the Double H Mountains to the south. The 10,468-acre Project area is located entirely on public lands administered by the Bureau of Land Management (BLM), Humboldt River Field Office. The latitude is: 41° 41' 52.58 north and the longitude: 118° 03' 53.45 west. The Project area's legal description is presented in Table 1-1.

Table 1-1: Thacker Pass Project Legal Description

Township	Range	Section
44 N	34 E	1 and 12
44 N	35 E	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17
44 N	36 E	7, 8, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 29

1.2 Contact Information / Responsible Parties

The Thacker Pass Stormwater Pollution Prevention Team will be responsible for updating this SWPPP, ensuring implementation and maintenance of BMPs, and preparing modifications to this SWPPP whenever there is a change in construction, operation, or maintenance that affects potential pollution sources, discharge pathways, or BMPs. The Stormwater Pollution Prevention Team is listed in Table 2.

Table 1-2: Thacker Pass Stormwater Pollution Prevention Team Contact Information

Title	Name	Telephone	E-mail
General Manager	To Be Determined	To Be Determined	To Be Determined
Mine Manager	To Be Determined	To Be Determined	To Be Determined
Environmental Director	Catherine Clark	775-827-3318	catherine.clark@lithiumamericas.com
Construction Manager	To Be Determined	To Be Determined	To Be Determined

The current mailing address for LNC personnel is:

Lithium Nevada Corporation
3685 Lakeside Drive
Reno, Nevada 89509

1.3 Past Operations

LNC has permitted and performed mineral exploration activities within the Project area since 2007, including construction of drill sites and access roads. Exploration activities have been conducted in the Project area as part of the Kings Valley Lithium Exploration Project. A portion of the proposed Project disturbance (114 acres) was included in the Kings Valley Clay Mine (KVCM) (BLM Case File Number N91547), which was permitted in 2014 but never developed (LNC 2018). LNC also has two active Notice of Intents (NOI); the Quinn River Valley Test Wells NOI (N94510) and Far East NOI (N95396). These authorizations, when combined, total less than 200 acres. LNC will be responsible for reclaiming areas that have been previously disturbed by exploration activities.

1.4 Proposed Operations

A complete description of proposed mining and processing operations for the Project are provided in the Thacker Pass Project Plan of Operations and Reclamation Plan (LNC 2019a). The mine and processing plant are scheduled to operate 24 hours per day, 365 days per year; however, this schedule may vary depending on mining, weather and market conditions. The Project will disturb approximately 5,545 acres over the 41-year mine life.

The Project at full development will include the following main infrastructure as shown on Figure 2:

- Development of an open pit mine;
- Concurrent backfill of the open pit using waste rock and coarse gangue material;
- Construction of two WRSFs for permanent storage of excavated mine waste rock;
- Construction and operation of mine facilities;
- Construction of a Run-of-Mine (ROM) stockpile;
- Construction and operation of an attrition scrubbing process including an ore slurry pipeline;
- Construction of a coarse gangue stockpile;
- Construction and operation of a lithium processing facility;
- Construction and operation of a sulfuric acid plant and associated energy production;
- Construction and operation of a battery production facility;
- Construction and operation of a Clay Tailings Filter Stack (CTFS);
- Construction and maintenance of haul and secondary roads;
- Construction and maintenance of stormwater management infrastructures (diversions and sediment ponds);
- Construction of three growth media stockpiles;
- Construction of power transmission lines and distribution;
- Installation of water supply, conveyance pipeline, booster pump stations, and storage infrastructure;
- Construction of ancillary facilities to support the Project such as septic systems, communication towers, guard shacks, reclaim ponds, monitoring wells, weather station, fiber optic line, buffer areas, and fencing.

LNC will develop the Project in two phases (Phase 1 and Phase 2) over the estimated 41-year mine life. Pending LNC receiving the required authorizations and permits for Phase 1 of the Project, pre-stripping will commence in 2021, construction in the first quarter of 2021 with mining production and ore processing estimated to commence in 2022. LNC estimates that it will complete mining and processing activities in 2063, after which, reclamation, site closure activities, and post-closure monitoring will occur for a minimum of five years.

1.5 Site Conditions

1.5.1 Climate

Northern Nevada has a high-desert climate with cold winters and hot summers (Advisian 2018). A meteorological station has continuously operated in the Project area since 2011. The station collects temperature, precipitation, wind speed and direction, solar radiation, and relative humidity.

The temperature recorded at the LNC station from 2011 to 2017 ranged from zero degrees Fahrenheit (°F) to 99°F. The area is generally dry; and, annual precipitation in the Project area ranged from 8.6 inches in 2013 to 15.7 inches in 2014. Winter precipitation (December to February) was higher, with total precipitation ranging from 0.3 inches to 3.7 inches for the season. Precipitation recorded during the summer (June to August) was lower, ranging from zero inches to 1.3 inches (Advisian 2018).

1.5.2 Historic Spills and Releases

Spills and releases are reported in accordance with the Comprehensive Environmental Response, Compensation, Liability, and Recovery Act (CERCLA) or with the Clean Water Act (CWA). Large releases are reported immediately; smaller spills are reported quarterly on NDEP Form 0490. According to LNC staff and quarterly report records on file, for the period three years prior to completion of this SWPPP (April 2016 to April 2019) there were no spills of CERCLA reportable quantities.

1.5.3 Disturbance Areas

A summary of the authorized disturbance areas, proposed disturbance areas, and proposed total disturbance areas is presented in Table 3. Previously authorized disturbance, as discussed in Section 1.3, is included for the Project.

Table 1-3: Proposed Disturbance Areas

Facility	Authorized Surface Disturbance (acres)	Existing Disturbance to Date (acres)[1]	Proposed Total Disturbance (acres)
Previous Authorizations			
Kings Valley Lithium Exploration Project	75	50.5[2]	(50.5)[2]
Kings Valley Clay Mine	114	4.6	(4.6)
Quinn River Valley Test Wells NOI	3.5	1.5	(1.5)
Far East NOI	1.5	0.2	0.2
Proposed Project			

Facility	Authorized Surface Disturbance (acres)	Existing Disturbance to Date (acres)[1]	Proposed Total Disturbance (acres)
Mine Pit	0	0	1,099.8
West WRSF	0	0	160.7
East WRSF	0	0	137.2
Mine Facilities, Run-of-Mine Stockpile, Attrition Scrubbing	0	0	48.3
Coarse Gangue Stockpile	0	0	318.3
Processing Facility (Lithium and Sulfuric Acid Plant)	0	0	555.3
Clay Tailings Filter Stack	0	0	1,166.1
Mine Facilities Power Line, Quinn Power Line, and Water Supply	0	0	267.7
Exploration	0	0	150.0
Inter-Facility Disturbance[3]	0	0	1,641.4
Total	**194**	**56.8**	**5,545.0**

Note: [1] Disturbance totals as of December 31, 2018 (with the exception of footnote #2).
[2] The 2019 geotechnical disturbance was permitted under the Kings Valley Lithium Exploration Project Plan of Operations Work Plan #11. Total acreage shown includes 4.6 acres of authorized disturbance for the 2019 geotechnical disturbance; not actual on the ground disturbance. Actual disturbance limits for the 2019 geotechnical disturbance will be provided to the BLM in March 2020 when annual disturbance acreages are submitted for the 2019 year.
[3] Includes haul and secondary roads, growth media stockpiles, stormwater infrastructure (diversions and ponds), septic systems, communication towers, guard shacks, reclaim ponds, weather station, fiber optic line, buffer areas, and fencing.

1.5.4 Receiving Waters

Lands within the proposed Project area primarily drain eastward to Quinn River Valley. A small portion of the proposed mine pit area drains west to Kings River Valley via Thacker Creek. Figure 3 shows the location of the surface water bodies in and around the Project area.

Thacker Creek and Crowley Creek are the principal streams found to drain within the area; both streams were verified as isolated channels that do not reach the Kings River or Quinn River (Redhorse 2018). The survey area (18,686 acres), which included the Project area, contained approximately nine acres of channel and 28 acres of wetland (Redhorse 2018). All features delineated were isolated with no connection to foreign or interstate commerce. All ephemeral channels lacked a significant nexus to a Traditional Navigable Water. Channels and wetlands on the Project did not meet the criteria of waters of the United States (Redhorse 2018). This was confirmed by the USACE through an Approved Jurisdictional Determination (AJD) on February 8, 2019 (Identification Number SPK-2011-01263).

This finding was consistent with previous AJDs made by the USACE on October 11, 2012 and July 26, 2017 within the proposed Project boundary (Redhorse 2018). Both of the previous AJDs also

determined that aquatic resources within the area were not subject to federal Clean Water Act Section 404 permitting requirements because all wetlands and streams were isolated with no interstate commerce use.

Based on the terminal nature of the drainages and lack of year-round surface water, no receiving waters and thus no jurisdictional waters of the U.S. could potentially be impacted by polluted stormwater originating at the Project.

All portions of the Project area eventually drain to roadside ditches, which are ephemeral tributaries to either Crowley or Thacker creeks. The isolation of Crowley Creek and Thacker Creek from any distant surface watercourses reduces the probability of spilled materials reaching the riparian areas of Quinn or Kings Rivers, and provide for containment and remediation opportunities if required.

Neither Thacker Creek nor Crowley Creek are listed on Nevada's 303(d) list of impaired waters (NDEP 2016).

1.5.5 Discharge Locations

LNC will operate the Project as a zero-discharge facility. The CTFS will be designed with a liner system in accordance with the Water Pollution Control Permit (WPCP) criteria. Process solutions will be contained within the fluid management system. Components of the fluid management system will be equipped with secondary containment structures to contain spills or releases of process solution.

Based on the isolated nature of the surface water drainages from regional watercourses (refer to Section 1.5.4), lack of year-round surface water and the zero-discharge nature of the facility, no jurisdictional waters of the U.S. are expected to be negatively impacted by stormwater originating at the site.

2 Potential Sources of Stormwater Pollution

This section discusses each Project facility's potential, if any, as a source of stormwater pollution. The types of potential stormwater pollution sources that, depending on specific activities, could be present at the Thacker Pass Project include:

- Sediment as total suspended solids (TSS);
- Petroleum hydrocarbons; and
- Reagents, process solutions/slurries, or other chemicals.

The areas where potential sources of stormwater pollution could occur within the Project area are summarized in Table 4 and described in more detail in the following subsections.

Table 2-1: Summary of Potential Pollution Sources

Source	Location	Potential Pollutants
West WRSF and Solid Waste Landfill	West Portion of Project Area	TSS
East WRSF	Central Portion of Project Area	TSS
Coarse Gangue Stockpile	Central Portion Project Area	TSS
ROM Stockpile	South Portion of Project Area	TSS
Mine Facilities Area	South Portion of Project Area	TSS, Petroleum Hydrocarbons
Process Plant/Sulfuric Acid Plant	Process Plant Area	TSS, Petroleum Hydrocarbons, Reagents, Process Solutions, Other Chemicals
Exploration Program	Throughout Project Area	TSS, Petroleum Hydrocarbons
Water Supply System	East Portion of Project Area	TSS
Haul and Secondary Roads	Throughout Project Area	TSS, Petroleum Hydrocarbons
Growth Media Stockpiles	Throughout Project Area	TSS
Ancillary Facilities	Throughout Project Area	TSS, Petroleum Hydrocarbons, Reagents

3 Facility Narrative

3.1 Mine Pit

Mining will be conducted by open pit method throughout the 41-year mine life. Ore will be mined by using either truck loaders, a surface miner, or excavators, and hauled to the ROM stockpile located south of the open pit (Figure 2). Waste rock material generated during mining activities will be placed in the proposed WRSFs (Figure 2) before being directly placed as backfill material in the pit.

A numerical groundwater flow model will be developed to assess potential impacts to local and regional groundwater systems and to predict inflow to the open pit over the period of active mining. Pit dewatering is not expected to be required as part of the Project until mining advances into the southeast portion of the pit area, currently projected to be in 2055. The peak dewatering rate is expected to be approximately 195 gpm when mining occurs in the southeast portion of the mine area, projected to be in 2065. LNC will use sump pumps to dewater and directly fill water trucks for dust suppression. No storage tanks or wells will be needed to support dewatering. Concurrent backfill of the open pit will preclude the formation of a pit lake at cessation of mining. No surface water discharges will be generated from the mine pit.

3.2 Waste Rock Storage Facilities

Waste rock material generated from open pit operation will be placed in two proposed WRSFs, located west and east of the pit (Figure 2). The West WRSF is designed with a storage capacity of approximately 32.7 M CY while the East WRSF will accommodate placement of approximately 13.2 M CY of waste rock material. LNC plans to haul waste rock to either WRSF based on operational requirements such as capacity and haul cycle efficiency.

The waste rock material will be placed in approximately 50-foot lifts placed to form overall slopes of 3H:1V (horizontal to vertical) for the West WRSF and 4H:1V for the East WRSF during the operational phase of the Project. Growth media within the proposed WRSFs footprint will be salvaged and stockpiled for use in future reclamation activities. LNC will conduct concurrent reclamation of the WRSFs over the mine life.

The WRSFs will consist of a wide range of particle sizes of rock and clay and will be a source of suspended solids.

3.3 Mine Facilities Area, ROM Stockpile, Attrition Scrubbing

The proposed mine facilities are located south of the mine pit (Figure 2). This area will include the main entrance to the mine area. LNC will construct and operate the following facilities to support mining operations: parking area, shop/office/warehouse building, fuel farm, wash station, substation, and ready line.

LNC will haul ore recovered from open pit operation to the ROM stockpile located south of the pit (Figure 2). LNC proposes to construct and operate mineral processing facilities in the attrition scrubbing and classification areas to separate the lithium-rich, fine clay material from the low-grade, coarse material referred to as coarse gangue (Figure 2).

The mine facilities, ROM stockpile, and attrition scrubbing area will contain petroleum hydrocarbons; all are potential sources of stormwater contamination. The facilities will also be comprised of disturbed soils that will be susceptible to erosion and are a potential source of suspended solids.

3.4 Coarse Gangue Stockpile

LNC will convey coarse gangue material produced by the process to a stockpile located east of the open pit (Figure 2). The stockpile is designed with a 48.4 million cubic yards (M CY) storage capacity and be a maximum of approximately 200 feet tall with 4H:1V slopes (Figure 2). LNC will strip the ground surface to provide a geotechnically stable foundation for the gangue stockpile and store any potential growth media. The stockpile will be constructed in 50-foot lifts using trucks and dozers.

The coarse gangue stockpile will be a source of suspended solids.

3.5 Clay Tailings Filter Stack

Lithium processing will produce tailings comprised of acid leach filter cake (clay material), neutralization filter cake, magnesium sulfate salt and sodium/potassium sulfate salts, collectively referred to as clay tailings. Limestone will be added on an as-needed basis for structural stability. LNC proposes to place the clay tailings in the CTFS which will be a permanent lined storage facility located east of the process plant (Figure 2). Prior to disposal, the tailings will be dewatered to a wet-basis moisture content of approximately 33 percent, which is calculated by dividing the weight of water by the weight of the water plus solids. The dewatered tailings will be transported to the CTFS using either conveyors or haul trucks or a combination of the two. Centrifuged mineral salts will be approximately ten percent water by weight before being conveyed to the CTFS. Approximately 353.6 M CY of clay tailings will be placed on the facility over the 41-year mine life.

Stacked tailings will be stabilized with shallow slopes for most of the perimeter of the facility. LNC will construct a buttress at the southern end of the facility. The CTFS will be constructed with 40-foot lifts. LNC will grade the exterior slopes of the perimeter berms to an overall slope of 3H:1V; whereas, interior slopes will be graded to 2H:1V. Waste rock material will be used for construction of the CTFS buttress. The CTFS will be fully lined with a high-density polyethylene (HDPE) geomembrane, underlain with a six-inch liner bedding material. The facility will include a seepage collection system between the geomembrane and the clay tailings which will allow water to drain to the reclaim ponds.

3.6 Processing Facility

The process plant is located in the south-central portion of the site (Figure 2) and consists of buildings, process machinery, bulk petroleum storage, bulk solids storage, process reagents, and relatively impervious surfaces such as compacted roadways and parking areas. All petroleum hydrocarbons, reagents, chemicals, and process solutions/slurries will be contained within secondary containment. Potential sources of stormwater contamination from these products may be present on roadways and parking areas from vehicle traffic. The process plant and surrounding ancillary facilities will also be comprised of disturbed soils that will be susceptible to erosion and are a potential source of suspended solids.

3.7 Exploration Operations

Over the life of the Project, it is anticipated that additional drill sites and exploration disturbances may be necessary for continued exploration within the Project area. Exploration will be done during operations and some exploration activities will occur within the Project area. Reclamation methods proposed include reshaping and recontouring of exploration road and pad disturbance. Side-cast growth media will be replaced during recontouring activities. Revegetation will include seeding and other activities as described above. The soil disturbance has the potential to create turbid runoff. Petroleum and other hydrocarbon releases have the potential to occur from mobile equipment.

3.8 Water Supply System

Water for the Project will be provided from the following sources: the Quinn Production Well and the Quinn Backup Well, steam condensate, process condensate, and recycled process water. The existing Quinn Production Well and the proposed Quinn Backup Well will be the main water source for the Project's water supply. The Quinn Backup Well will be located southwest of the Quinn Production Well in the Quinn River Valley. Water from the two wells will be piped to a water tank located in the plant area with the support of two booster pumps and/or a pump tank arrangement. LNC will construct a water pipeline for the Quinn Production Well and Quinn Backup Well to the raw water storage tank located in the plant. The proposed seven-mile underground pipeline will follow the transmission line corridor. Well

water will primarily be used in the production of steam and sulfuric acid while recycled process water will be used throughout the production facility to slurry solids. A water storage tank will be located in the tank farm area within the process plant.

Water to supply the mine and attrition scrubbing areas will be piped from the process plant area via the interplant pipe containment channel.

Potable water will be supplied by treating water obtained from Quinn Production Well and Quinn Backup Well and stored on site. Drinking water facilities will be provided in two locations: the process plant/admin building area and mine facilities. LNC will secure appropriate permits for an on-site potable water system from the Nevada Bureau of Safe Drinking Water (BSDW).

3.9 Haul and Secondary Roads

Haul roads will typically be constructed using an 80-foot width with a maximum gradient of less than ten percent. Secondary roads will generally be approximately 30-feet in width. Mine roads will be bermed in accordance with Mine Safety and Health Administration regulations.

Stormwater run-on to haul roads can originate from precipitation and from up-gradient disturbance areas. Scouring and gully erosion can occur on the surface and sides of haul roads during severe storm events. Therefore, haul roads and secondary roads have been identified as potential pollution sources for suspended solids. Trucks will be washed periodically at a truck wash station to remove and capture mud and petroleum residue which reduces the potential for stormwater contamination.

3.10 Growth Media Stockpiles

Growth media suitable for reclamation will be salvaged and stockpiled during the development of the pit and construction of Project facilities. Growth media will consist of soils stripped during initial surface disturbance activities. Since the growth media stockpiles consist of disturbed soil that will lack vegetation until stabilization, the stockpiles have been identified as potential pollution sources for suspended solids during a storm event or period of runoff.

3.11 Ancillary Facilities

Ancillary facilities will consist of buildings (e.g., truck shop, plant maintenance shop, laboratory, warehouse, administration, and security buildings). An ancillary facility is considered a potential stormwater pollution source if the location is exposed to precipitation or contacts stormwater and has the potential to generate stormwater pollution types identified in this section. Locations where potential contaminants are contained within buildings, engineered containment structures, or within the enclosed

confines of the process circuit are not considered potential stormwater pollution sources. Runoff associated with ancillary facilities will be a potential source of suspended solids.

3.12 Solid Waste Landfill

Both domestic and industrial solid waste will be generated during construction and operations of the Project. LNC will either haul solid waste to the existing Humboldt County Landfill, located north of Winnemucca, or dispose of solid waste in an on-site Class III waivered industrial landfill in accordance with NAC 444.731 through 444.737. If an onsite landfill is utilized during operation, it will be located in the West WRSF or inside the pit. Construction wastes and wastes generated during closure (e.g., concrete building foundations) may be disposed of in a permitted on-site Class III landfill located within the West WRSF. The construction landfill will cover an area approximately 250 feet by 350 feet. Final cover over all disposal sites will consist of a minimum of 24 inches of compacted soil meeting the requirements of NAC 444.6891.

The landfill will be capped, and its location surveyed and documented throughout the mine life. A training program will be implemented to inform employees of their responsibilities in proper waste disposal procedures.

3.13 Construction Activities

Construction of facilities will be performed by contractors over a forecasted two-year period. Construction activities that disturb areas exposed to precipitation and/or stormwater flow may be considered a potential source of stormwater pollution.

4 Best Management Practices Identification

LNC will implement BMPs to manage the flow of stormwater, prevent uncontrolled flooding, and minimize erosion and sediment transport from Project facilities and disturbed areas during construction, operations, and initial stages of reclamation. BMPs covered in this section include structural and non-structural controls.

Structural Control BMPs

Structural stormwater controls include stormwater diversion and sediment control facilities. Structural controls will be designed to manage increased peak flows created by disturbance of pervious surfaces and will work towards reducing scour or energy, preventing run-on, and managing runoff quantity and quality. Structural controls are either permanent as part of the overall stormwater management plan (including post reclamation) or are temporary as part of stormwater management during construction and operations.

In general, stormwater diversion and erosion/sediment structural control BMPs include the following types:

- *Up-Gradient Control.* Diversion of stormwater up-gradient of roads, disturbed areas, and other potential pollution sources to avoid comingling with potentially impacted waters. This will be accomplished by using a combination of berms, channels/swales, culverts, and water bars. Where scour is a concern, check dams, vegetation, riprap and/or synthetic lining will be installed if necessary, to reduce flow velocity and/or armor the banks.
- *Down-Gradient Control.* Management of stormwater quantity and quality on disturbed lands include ditches, rip-rap lining, synthetic lining, and sediment control structures, and lined and unlined ponds. Down-gradient structural controls will capture stormwater originating on WRSFs, ROM stockpile, coarse gangue stockpile, CTFS, and growth media stockpiles. Stormwater originating on roads will be captured in roadside channels with integral engineered outlets that allow diversion to natural drainage ways. Sediment control structures, including sediment ponds, will be employed to manage water quality prior to discharge into natural drainage channels.
- *Temporary Construction Controls.* Management of water quality and quantity during construction will employ a combination of temporary silt fences, check dams, straw bales, sediment traps, waddles, and/or temporary diversion channels. Temporary construction structural controls will be monitored and maintained continuously for performance and may be relocated or adjusted as construction activities progress.

Temporary channels employed during construction will be designed to convey the 10-year, 24-hour design storm. Drainage channels employed during operations will be sized to convey a 25-year, 24-hour design storm except in the plant area where channels will be sized to convey the 100-year, 24-hour design storm event. Drainage channels for final closure will be sized to convey the 500-year, 24-hour design storm.

Sediment ponds will be constructed within the Project area to collect and settle out solids transported by stormwater runoff from disturbed areas. The sediment ponds will be designed to store a minimum two-year, 24-hour storm event and release excess water using a riser pipes or by using pumps over time. Water will also be removed by infiltration and evaporation. Sediment ponds will be designed with an overflow system sized to a minimum 25-year, 24-hour storm event (spillway or overflow pipe). In the event of an overflow, water in the pond would be directed to natural drainage or diversion channels. The sediment ponds will be routinely cleaned out to maintain adequate storage capacity. Sediment removed from the sediment control structures in the CTFS area will be placed on the CTFS; other sediment removal may be placed in the active open pit or along the berm of the pond.

The CTFS reclaim pond and drainage channels will be designed to manage runoff from the 100-year 24-hour design storm.

Non-Structural Control BMPs

Non-structural stormwater controls are generally preventative in nature and include good housekeeping practices, inspections, preventative maintenance, and reclamation and revegetation. The following sections describe specific structural BMPs for Project facilities. This is followed by a discussion on specific non-structural BMPs for the facility.

4.1 Mine Pit

Dewatering is not expected to be necessary to maintain mining operations in the pit as described in Section 3.1. Diversion channels north of the pit, shown on Figures 2 and 3, are designed to divert surface water flows from the 25-year, 24-hour design storm up-gradient of the open pit and direct it along the eastern and western boundaries of the pit. The outflow of the diversion channels will drain stormwater flows into existing drainages.

4.2 Waste Rock Storage Facility

The WRSFs surface will be graded to manage runoff by diverting water to conveyance structures. LNC will construct stormwater diversion channels at the toe of the proposed WRSFs as shown on Figure 2.

The diversion below the West WRSF toe (Figure 2) will collect surface water flows from the WRSF and is designed to convey the 25-year, 24-hour design storm. Flows from this area will be treated by sediment pond to improve water quality before discharging into Thacker Creek to the west.

Stormwater channels will be constructed up-gradient and down-gradient of the proposed East WRSF (Figure 2). Channels on the east and west side of the facility will divert water away from the facility and convey stormwater to sediment pond P5 located on the south side of the WRSF. The diversion channels are designed to convey the 25-year, 24-hour design storm. Flows from this area will be directed to diversion channels south of the WRSF and to an existing drainage.

Reclamation of the WRSFs will establish a sustainable landform. The WRSFs will be reclaimed to meet certain general objectives including minimizing erosion, mass stability, rounded edges, and revegetated surfaces that will be similar to surrounding topographic features. Reclamation of the WRSFs will be conducted concurrently with mine operations to the extent practicable. The final configuration of the WRSFs will incorporate undulating surfaces and hillocks to break up flat lines on the top surface and better simulate the surrounding natural topography and drainage patterns.

As areas of the WRSF reach their ultimate configurations and become inactive, the inactive WRSF face will be regraded, covered with six to 12 inches of growth media, and seeded. Erosion during an initial equilibration period is anticipated and considered acceptable, as long as it stabilizes to a sufficiently low long-term rate. The WRSF soil cover is intended to be non-erosive.

4.3 Mine Facilities, ROM Stockpile, Attrition Scrubbing

Stormwater management for the facility will include channels designed to convey the 25-year, 24-hour design storm. LNC will construct sediment ponds on the east and west side of the complex to improve water quality of runoff coming from the ROM stockpile and mine facilities (Figure 2). A diversion channel will be constructed to capture stormwater run-off from the area and direct the flow to the sediment ponds. Water in the sediment ponds will infiltrate/evaporate or be discharged to an existing drainage.

4.4 Coarse Gangue Stockpile

Stormwater management for the coarse gangue stockpile will include diversion channels along the east, south, and west side of the facility (Figure 2). Channels will be designed to convey the 25-year, 24-hour design storm. The diversion channels will direct stormwater to culverts located south of the facility prior to being captured in a sediment pond located on either the east or west end of the facility. Water in the pond will infiltrate/evaporate or be discharged to an existing drainage.

4.5 Clay Tailings Filter Stack

Diversion channels sized to convey the 25-year; 24-hour storm will be constructed to manage stormwater in the CTFS area. Stormwater runoff will be directed to the east side of the CTFS where it will be directed to the reclaim ponds. Location of the proposed reclaim ponds are shown on Figure 2. The reclaim ponds will be double lined with an HDPE geomembrane separated by a layer of geonet. Water collected in the pond will not be discharged as part of the stormwater management. Water in the reclaim ponds will be pumped to the processing plant to be used as make-up water for processing operations or will evaporate. The reclaim ponds will be designed to hold runoff from the 100-year, 24-hour design storm. Approximately 80 million gallons of storage capacity will be required for the CTFS reclaim ponds. LNC will fence the area surrounding the reclaim ponds to restrict wildlife access.

The construction of an erosion control berm will be required at the CTFS facility crest to direct stormwater flow to constructed terrace channels and chutes. Stormwater runoff will be conveyed from the terrace channels to the CTFS perimeter channel (located at the facility base) and then into a CTFS reclaim pond. LNC will design the runoff collection channels to convey the 100-year 24-hr design storm, lined with either geomembrane or geotextile, and riprap.

4.6 Processing Facility

Up-gradient run-on will be diverted away from the processing facility. Diversion channels in the plant area will be sized to convey the 100-year, 24-hour design storm. An HDPE-lined process plant stormwater pond will be constructed to the southwest of the sulfuric acid plant to collect stormwater runoff from the paved areas of the plant site (Figure 2). The collected water will be returned to the process water tank located in the tank farm for use in the plant.

Fuels and other potential contaminants will be securely stored to reduce potential contamination of stormwater. Where practical, potential contaminants will be stored in silos or covered containment. Oil water separators or other devices may be needed to separate oily water from stormwater runoff. Other water will be collected and treated in sumps, piping, ditches, channels and outlets, riprap and other facilities, as necessary.

4.7 Exploration Program

Drilling will proceed to further define the lithium and clay deposits. The location of the drilling has not been defined other than it will occur within the Project area. Exploration drilling will require drilling pads, sumps and exploration roads. The soil disturbance created has the potential to create turbid runoff. Drilling effluent and precipitation runoff from the drill pad will be directed into and contained within the sumps.

Exploration roads that are required will follow existing roads to the extent possible or will be built in areas of low gradient where possible to minimize new disturbance. New exploration roads and drill pads will be reclaimed when they are constructed in areas where mining-related activities will not consume them.

4.8 Water Supply System

A 225-foot disturbance right-of-way will be used for the construction of the pipeline and distribution line from the process area to the Quinn Production Well and the Quinn Backup Well. Following construction, the area will be reclaimed by grading and seeding, with portions of the road retained as a 12-foot wide maintenance road to provide access to the wells, pump tank area, and booster stations. The road will be outfitted with waterbars, diversions, ditches and settlement ponds, as needed.

4.9 Haul and Secondary Roads

Haul roads will be constructed and maintained with aggregates. The roads will be graded and maintained to minimize ponding. Stormwater runoff originating on haul and secondary roads will be routed into roadside ditches and conveyed to sediment ponds, as needed. Roads will be crowned such that water will flow to the sides where the runoff can be directed to the roadside ditches. Culverts will be installed where needed. Armoring of ditches will be determined as part of the channel design.

4.10 Growth Media Stockpiles

The surfaces of growth media stockpiles will be shaped after construction with slopes no steeper than 3H:1V and seeded with an approved seed mix to reduce erosion. Stormwater channels, berms, silt fences, or staked straw bales will be constructed upstream of the stockpiles, if needed, to prevent or minimize erosion until vegetation is established.

4.11 Ancillary Facilities

BMPs at ancillary facilities include secondary containment for storage tanks and other containers, spill collection containment for fuel dispensing, preventative maintenance and inspections, and provision of spill response kits. Fuels, petroleum products, reagents, and chemicals will be stored within secondary containment. Containment will be designed to store 110 percent of the largest vessel, or flanged vessels, and secondary containment will additionally provide capacity to store runoff from the 100-year, 24-hour design storm.

Fittings connecting the delivery truck hoses to the unloading systems will be located within the containment areas or spill collection structures to contain minor leaks as well as catastrophic failures of the delivery system. Containers and tanks will be inspected on a scheduled basis, and maintenance will

be performed to avoid leakage from container ports or dispensing devices. Spill kits will be located at or near storage areas to contain and absorb spills. Storage areas will be placed away from potential run-on stormwater. Stormwater systems may include sumps, ditches, and oil water separators and other facilities to manage stormwater.

LNC maintains a Spill Contingency Plan (LNC 2019b) and an Emergency Response Plan (LNC 2019c) that describe emergency response responsibilities, procedures, and cleanup.

4.12 Solid Waste Landfill

Industrial solid waste will be disposed of in an on-site Class III industrial landfill as described in Section 3.12. Stormwater control measures for this facility are the same as for the West WRSF. The landfill will be capped, and its location surveyed and documented throughout the mine life.

4.13Construction Activities

Erosion and sediment control BMPs will be installed at disturbed areas during construction to manage stormwater quantity and quality. Temporary structures will typically be sized for the 10-year, 24-hour design storm. These temporary BMPs include:

- Installation of straw waddles, hay bales, silt fences and sediment traps.
- Stabilization practices (e.g., regrading disturbed surfaces, armoring/temporary covering of surfaces).
- Reducing runoff velocities by using temporary energy dissipation structures including check dams, riprap and minimizing slope grade, where practical.
- Monitoring and maintenance activities, such as repair of controls, emptying sediment traps and road resurfacing.
- Sediment removed from ponds during construction will be tested for petroleum and hydrocarbons, then re-used as growth media or disposed of properly based on test results.

4.14 Non-Structural Controls

Non-structural controls are procedures, management actions, and other policy activities that are employed to reduce the potential for pollutant loading in stormwater outfalls. Appropriate non-structural controls for the mine include:

- Good housekeeping measures;
- Routine inspections;
- Maintenance;
- Training; and,
- Reclamation and revegetation.

4.14.1 Good Housekeeping

Good housekeeping measures include, but are not limited to:

- Removal of non-essential products and waste materials from the site; and,
- Removal of debris from stormwater drainage areas.

Good housekeeping is one of the most effective BMPs for controlling stormwater pollution from process areas and storage areas. Spills will be cleaned up immediately and contaminated materials removed and disposed of in accordance with applicable regulations.

4.14.2 Routine Inspections

Inspections of disturbed areas and stormwater structural controls such as stormwater diversion and conveyance systems will be conducted to identify erosion and to ensure that structural controls are functioning effectively. Schedules for inspections are outlined in Table 5.

Table 4-1: Inspection and Monitoring Requirements (for Non-Construction Operations)

Location or Component	Inspection and Monitoring Schedule
Disturbed Areas	Quarterly After storm events >1-inch rainfall over 24 hours
Storage Areas	Quarterly After storm events >1-inch rainfall over 24 hours
Structural Stormwater Controls	Quarterly After storm events >1-inch rainfall over 24 hours During storm events as practicable
Vehicle Entry and Exit Sites	Quarterly During storm events >1-inch rainfall over 24 hours After storm events >1-inch rainfall

Note: > = more than

Disturbed Areas Inspection

Inspections of disturbed areas will include observing erosion, gullies, pooling of water, collapsed embankments, or other evidence of erosion will be identified and documented.

Structural Controls Inspection

Structural stormwater controls will be inspected to determine:

- The functional integrity of the structures; and,
- The amount of sediment accumulation, and if present, a plan for removal of sediment.

Breaches or other items requiring repair observed in berms, channels, or secondary containment will be recorded in writing and repaired prior to the next inspection. Following inspections, additional erosion controls or maintenance of existing BMPs will be implemented if required.

Storage Areas Inspection

Storage areas for chemicals, hazardous materials, solid and liquid waste, or other potential sources of stormwater pollution will be inspected to ensure that containment has not been adversely impacted by storm events.

Oil and Petroleum Storage Inspection

Primary containment (tanks, totes, drums, and other containers) and secondary containment structures for oil and petroleum products will be inspected quarterly, at a minimum.

Inspection Schedules

LNC will observe stormwater structural controls if feasible during storm events to ensure that the integrity of the structures is maintained. In addition, LNC will inspect disturbed areas, control structures, and storage areas exposed to precipitation or stormwater after a major storm event (e.g., rainfall in excess of one-inch falling during a consecutive 24-hour period).

Quarterly Inspections

Inspection and evaluation of BMPs described in Section 4 of disturbed areas will be conducted quarterly. Inspections of the BMPs and the disturbed areas will be conducted concurrently.

4.14.3 Maintenance

Maintenance will be performed after inspections to repair structural controls or to supplement or enhance existing BMPs with additional controls, as required. Maintenance can also be conducted as a result of non-routine observance of needed repairs and testing of facility stormwater equipment such as pumps. Examples of maintenance of stormwater controls include, but are not limited to:

- Removal of accumulated sediment from sediment ponds;
- Repair of deteriorated channel linings, pond linings, berms, or water bars;
- Routine maintenance of earth-moving equipment, pumps, and vehicles; and,
- Repair of equipment.

4.14.4 Training

An employee awareness, orientation, and training program will be conducted annually for all Project personnel. The education program will inform personnel of the components and goals of the Project's stormwater management plan. Table 6 identifies four modules for use at the annual training session.

Training programs at the site will utilize guidelines and written training plans utilizing Mine Safety and Health Administration protocol and requirements.

Table 4-2: Training Topics for Stormwater Management

Module	Training Requirements
Housekeeping and Source Control Measures	○ Review routine housekeeping measures and issues ○ Review procedures for minimizing pollutant sources
Site inspection procedures and maintenance of structural BMPs	○ Review site inspection procedures and schedules ○ Completion of BMP inspection forms ○ Maintenance of BMPs ○ Review BMP plan
Annual Periodic Evaluation	○ What to evaluate ○ Completing the Forms
Spill Prevention, Response, and Reporting	○ Review Spill Contingency Plan and Emergency Response Plan; and spill response, containment, and cleanup measures ○ Review spill notification procedures

In addition to stormwater management training, other forms of training will indirectly benefit the stormwater management program, such as training for staff in proper unloading techniques, emergency procedures training, and training to inform employees of their responsibilities in proper waste disposal procedures (e.g., allowable wastes that can be placed in the landfill, management of used filters, oily rags, fluorescent light bulbs, aerosol cans, and other regulated substances).

4.14.5 Reclamation and Revegetation

Reclamation of disturbed areas will be completed in accordance with BLM and NDEP regulations and the LNC Thacker Pass Project POO and Reclamation Plan (LNC 2019a). The POO and Reclamation Plan addresses earthwork and recontouring, revegetation and stabilization, and monitoring operations necessary to satisfactorily reclaim disturbed areas.

Reclaimed surfaces will be reseeded to control runoff and reduce erosion. Seedbed preparation and seeding will follow the BLM approved seed mix included in the POO and Reclamation Plan.

5 Non-Stormwater Discharge Management

Sources of non-stormwater that could combine with stormwater discharges are identified below. This section identifies the implementation of appropriate management measures for the non-stormwater components.

- Occasional flushing of wells or water pipelines for testing;
- Washing of buildings or concrete pads for housekeeping; and,
- Application of water or dust suppressants to roads.

5.1 Well and Pipeline Flushing

The amount of water used for periodic well or pipeline flushing is not normally a cause of significant erosion or sediment transport. Flushing activities will be completed as quickly as possible. A temporary discharge permit would first be obtained from NDEP prior to discharge.

5.2 Washing Buildings or Concrete

The volume of water used for occasional building and pavement washing is not normally a cause of significant erosion or sediment transport. The use of detergents for washing buildings or concrete is prohibited.

5.3 Dust Suppressants on Roads

Dust suppressants such as magnesium chloride, sodium lignosulfonate, or other approved dust suppressants may be applied to unpaved haul roads and access roads, as needed. Application of dust suppressants will be to road surfaces only. Water from direct precipitation and from water sprayed as routine dust control will come into contact with the suppressants on the roads and may contribute to stormwater pollution.

6 Monitoring and Reporting

The Thacker Pass Stormwater Pollution Prevention Team will observe stormwater structural controls during storm events to ensure that the integrity of the structures is maintained. In addition, LNC will inspect disturbed areas, control structures, and storage areas exposed to precipitation or stormwater after major storm events to ensure proper functioning of the stormwater management systems.

6.1 Quarterly Inspections

Inspection and evaluation of BMPs described in Section 4 and disturbed areas will be conducted quarterly. Inspections of the BMPs and the disturbed areas will be conducted concurrently. This evaluation will result in the preparation of a report checklist documenting the following:

- Evaluation of areas of disturbance and their current status;
- Evaluation of BMPs for their effectiveness in reducing stormwater pollutant loads; and,
- Schedule for modifying the BMPs and revisions to the stormwater management plan, if practical reductions of pollutants can be achieved.

6.2 Construction Inspections

During construction activities, LNC will inspect disturbed areas, storage areas, and structural controls that are exposed to precipitation at least once every seven calendar days and within 24 hours after receiving greater than one inch of rainfall in a 24-hour period.

7 Changes to the Stormwater Pollution Prevention Plan

This SWPPP identifies protocols for performing periodic inspections and evaluations which could have one or more of the outcomes listed below. For any of these outcomes, the SWPPP will require revision.

- "Undocumented" potential pollutant sources are identified on the project area;
- Potential pollutant sources described in the SWPPP have been removed from the Project; or,
- A determination is made that additional BMPs are required to effectively control stormwater and reduce the potential for pollutant migration.

8 References

Advisian, 2018. Technical Report on the Pre-Feasibility Study for the Thacker Pass Project, Humboldt County, Nevada, USA. August.

Lithium Nevada Corporation (LNC). 2019a. Thacker Pass Project Plan of Operations and Reclamation Plan. July.

_____2019b. Spill Contingency Plan Thacker Pass Project. July.

_____2019c. Emergency Response Plan Thacker Pass Project. July.

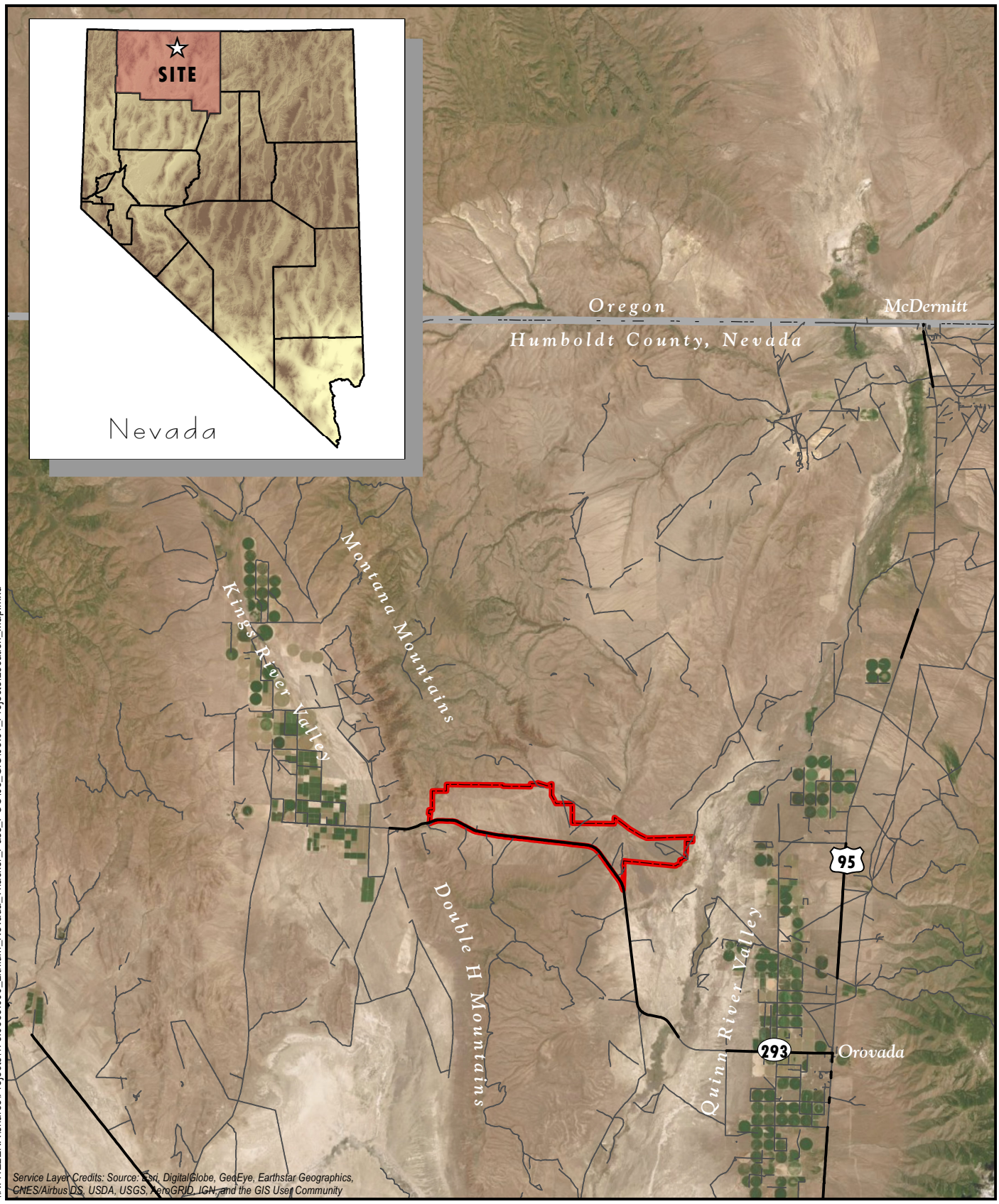
Nevada Division of Environmental Protection (NDEP). 2013. General Permit for Stormwater Discharges Associated with Industrial Activity from Metals Mining Activities. Effective 1 March 2013.

_____2016. Nevada 2014 Water Quality Integrated Report. Available at https://ndep.nv.gov/water/rivers-streams-lakes/water-quality-standards/303d-305b-water-quality-integrated-report Accessed 11 April 2019.

Redhorse Corporation (Redhorse). 2018. SPK-2011-01263 Aquatic Resource Delineation Report, Lithium Nevada Corporation, Thacker Pass Project 2018 (18,686 acres). August.

USACE February 2019 AJD (see Corps File No. SPK-2011-01263 [February 8, 2019]).

Figures



\\WFHELENA\shares\Projects\475.0385.000_Lithium_Nevada_Thacker_Pass_POO\05_GIS\05.01_Projects\Location_Map.mxd

N

0 8

Miles

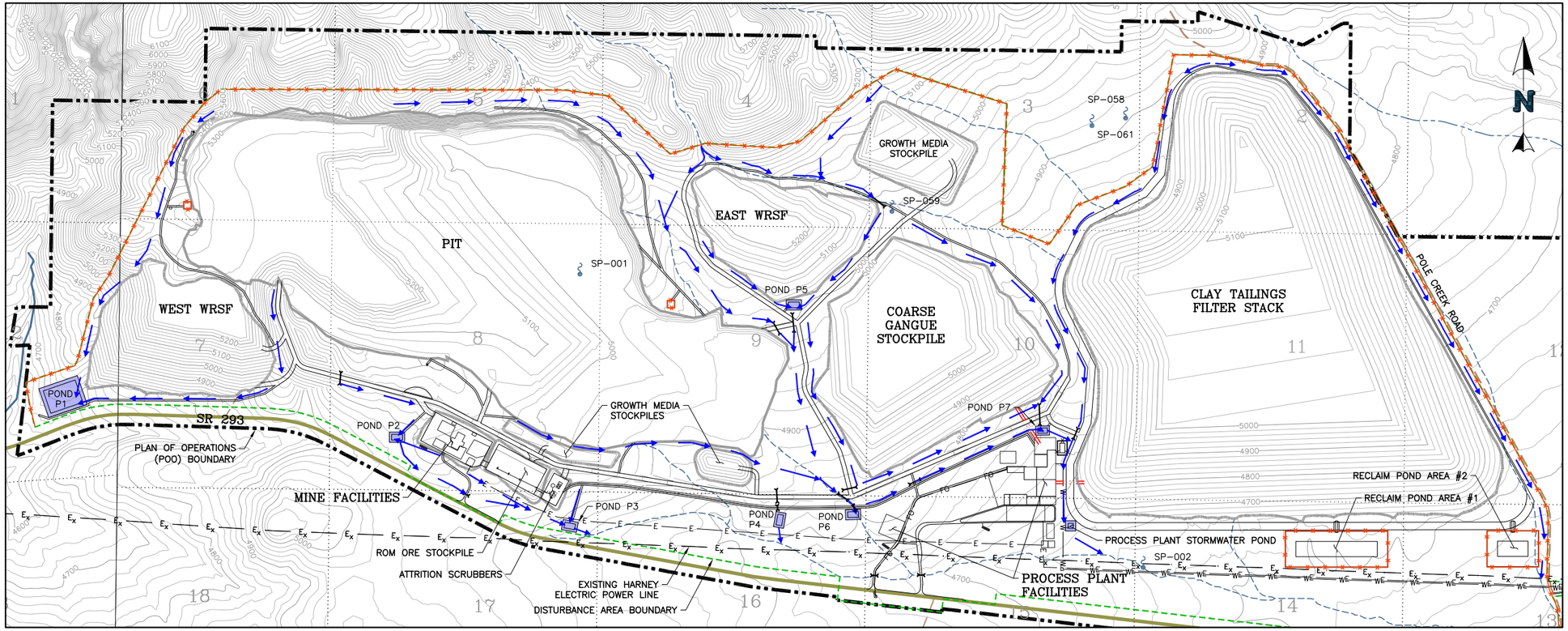
Plan of Operations Boundary

Nevada DOT Roads

Other Roads

LithiumNevada

Location Map
Thacker Pass Project
Humboldt County, Nevada
FIGURE 1



LEGEND:

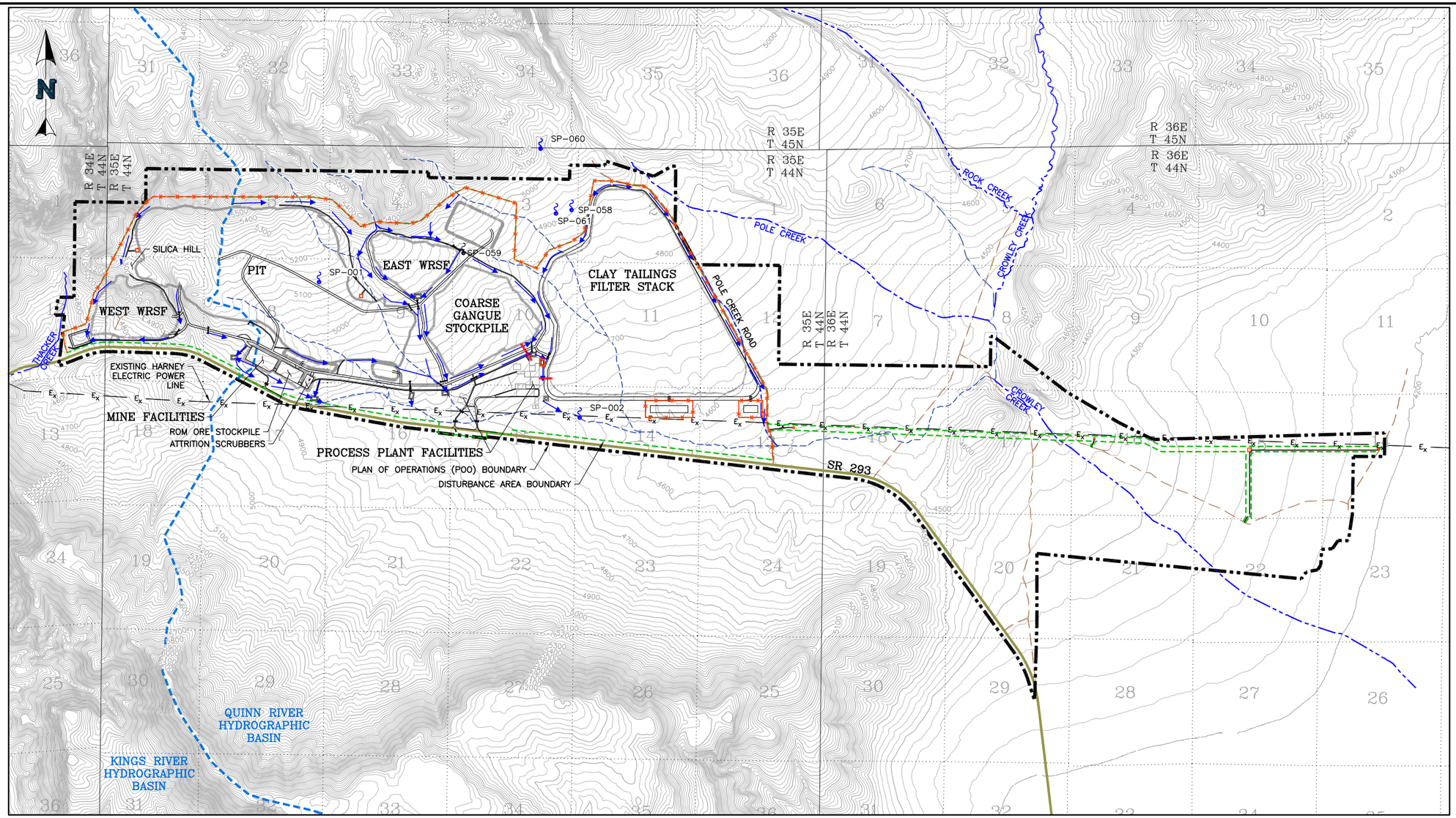
- CLOSURE 20 FOOT CONTOURS
- 4500 CLOSURE CONTOUR ELEVATION
- EXISTING ROADS–MAJOR
- EXISTING ROADS/TRAILS
- EXISTING DRAINAGES
- EXISTING EPHEMERAL CREEKS
- EXISTING PERENNIAL STREAMS
- SECTION LINES
- 20 SECTION NUMBER
- POO BOUNDARY
- DISTURBANCE AREA BOUNDARY
- Ex EXISTING POWER LINE
- E POWER LINE
- W WATER LINE
- FO FIBER OPTIC LINE
- FENCE
- CONVEYOR CORRIDOR
- STORMWATER DIVERSION CHANNEL
- CULVERT
- SEDIMENT POND
- EXISTING SPRING/SEEP

NOTE:

1. ALL LINE WORK IS PROPOSED UNLESS CALLED OUT AS EXISTING.

LithiumNevada

Proposed Thacker Pass Project Layout
Thacker Pass Project
Humboldt County, Nevada
FIGURE 2



LEGEND:

- EXISTING GROUND 20 FOOT CONTOURS
- 4500 EXISTING CONTOUR ELEVATION
- EXISTING ROADS–MAJOR
- EXISTING ROADS/TRAILS
- EXISTING DRAINAGES
- EXISTING EPHEMERAL CREEKS
- EXISTING PERENNIAL STREAMS
- SECTION LINES
- 20 SECTION NUMBER
- R 34E RANGE 34 EAST
- T 44N TOWNSHIP 44 NORTH
- RANGE/TOWNSHIP LINE
- POO BOUNDARY
- DISTURBANCE AREA BOUNDARY
- HYDROGRAPHIC BASIN BOUNDARY
- FACILITY BOUNDARY
- E_x EXISTING POWER LINE
- FENCE
- EXISTING SPRING/SEEP
- POND
- CONVEYOR CORRIDOR

0 2000 4000 FEET

NOTES:

1. ALL LINE WORK IS PROPOSED UNLESS CALLED OUT AS EXISTING.
2. ANCILLARY ROADS WITHIN THE PIT BOUNDARY AND PROPOSED UTILITIES AROUND THE PROCESS PLANT FACILITIES ARE NOT SHOWN TO MAINTAIN CLARITY.

LithiumNevada

Surface Water Bodies
Thacker Pass Project
Humboldt County, Nevada
FIGURE 3