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DIVISION OF MINERALS

STATE OF NEVADA
COMMISSION ON MINERAL RESOURCES
DIVISION OF MINERALS
400 W. King Street, Suite 106
Carson City, Nevada 89703
(775) 684-7040 | Fax (775) 684-7052
http://minerals.nv.gov

Date Received 12/5/2022
County Esmeralda
NDOM Permit Number
FOR DIVISION USE ONLY

DISSOLVED MINERAL RESOURCE EXPLORATION WELL PERMIT APPLICATION

Applicant/Operator Name: GeoXplor Corp.
Street Address: 8-650 Clyde Avenue
City: West Vancouver State/Prov.: Vancouver
Country: Canada Zip Code: V7T1E2
hereby makes application for a dissolved mineral resource exploration well permit.

(if applicant is a corporation, show state and date of incorporation; if a partnership, list names of partners.)

GeoXplor is a corporation operating in Vancouver Canada. GeoXplor was incorporated with the Secretary of State of Nevada, on November 9, 2004, Business License Number NV 20041646739. Clive Ashworth is the sole director of GeoXplor Corp.

Well Name TW-1

This application is for a: ☒ New Exploration Well ☐ Borehole to Well Conversion
☐ Permit Extension (NDOM Perm...#_____) (Indicate below any changes to original permit)
Permit Extension Reason:

Applicant is: ☐ Land Owner ☒ Lease/Claim Holder

Land Status (choose one):

☒ Federal *(BLM, USFS, etc...)*
Mining Claim: NMC# 1142552
Project Name: ACME TW-1 NVN# 101026

☐ Non Federal
APN#: Land Owner:
Bond Type: Issued by:
Amount: Number:

Groundwater Basin Name and Number: Clayton Valley, Basin 143
Area With Limitations? ☐ Y ☒ N
(Well proposed to be drilled within areas with limitations may require Blowout Prevention Equipment, per NAC 534B)

Location of Well:
County: Esmeralda

NW ¼ of the NE ¼ of 6 Sec., Township 2 ☐N ☒S, Range 40 E

UTM East: 448947 or Longitude: -117.579929°
UTM North: 4184008 Latitude: 37.802025°
☒ NAD83 ☐ WGS84 *M.D.B.& M.*

Drilling Contractor (if known): Harris Exploration Drilling #2554

Address: P.O. Box 5579

City, State Zip: Fallon, NV 89407

Purpose of Well: Small scale aquifer testing and dissolved mineral resource evaluations.

Drill Rig Type: Ingersoll Rand RD 10

Surface Hole Diameter: 22"

Expected Total Depth: 2,000 Feet

Casing Size/Length: 16" to 50' and 7" to 2000'

Casing Weight/Gauge: 45lbs/FT and 20lbs/FT, 0.312 Wall

Casing Schedule/Grade A53B PEB and A53B STC

Blowout Prevention Equipment Rating: ☒ None ☐ 2000 psi ☐ 3000 psi ☐ 5000 psi

Fluid Management Plan - NAC 534B.140(1)(C):

See Attachment 2

(Describe Here or Attach Additional Pages)

Contamination Prevention/Cementing Plan - NAC 534B.140(1)(D):

See Attachment 2

(Describe Here or Attach Additional Pages, must include Well Schematic)

Flow Monitoring and Plugging Plan - NAC 534B.140(1)(E):

See Attachment 2

(Describe Here or Attach Additional Pages)

Drilling will commence approximately on: January 31, 2023

Signature of Applicant/Agent:

Printed Name/Title: Matt Banta, Project Hydrogeologist

Date: 11/28/22

An application submitted without a signature and date will not be considered for approval.

- - - - -Attach $1,000.00 Application Fee Per NAC 534B - - - - -

- - - - - TO BE COMPLETED BY DIVISION - - - - -

CONDITIONS OF PERMIT

1. **All permittees must comply with appropriate sections of the Dissolved Mineral Resource Regulations of the Division of Minerals and with applicable rules and regulations of state and federal agencies.**

2. **For a well located on non-federal land, a bond in an amount determined by the Division to be necessary to properly plug the well in accordance with NAC 534B must be included.**

3. **Well Permit Expires two (2) years from date of approval.**

4. **See attached Conditions of Approval.**

5. **Send any required reports to: .... ndom@minerals.nv.gov**

6. **Additional Conditions/Comments**

A.	
B.	
C.	

This permit does not extend the permittee the right of ingress and egress on public, private or corporate lands.

The issuance of this permit does not waive the requirements that the permit holder obtain other permits from State Federal, and local agencies.

PERMIT APPROVAL

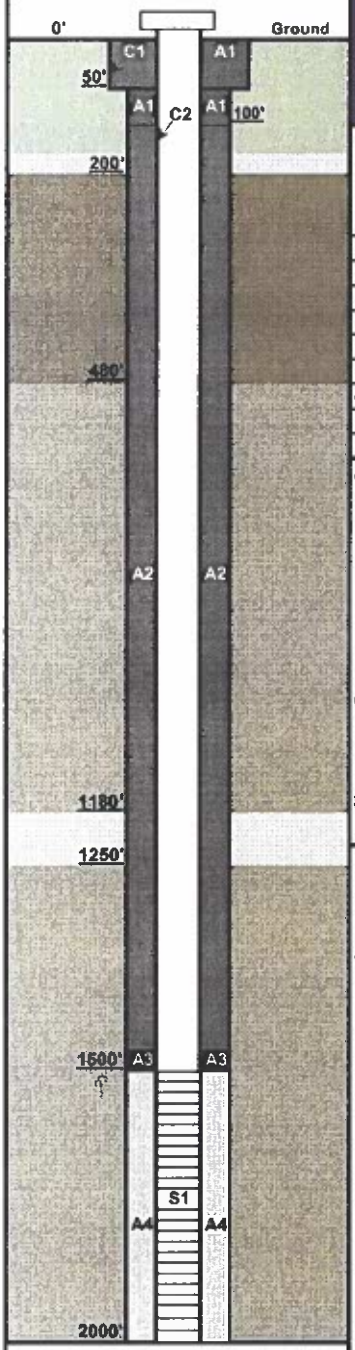
Approved _____ with the conditions noted above.
Date

Permit Number _____

_____
Administrator
Division of Minerals

Attachment 1

Project Location Map, Well Location Map and Well Schematic



NOT TO SCALE

GeoXplor Corp.
Clayton Valley North Project

Site Location: Esmeralda County, Nevada
Project Number: DH-1
Coordinates: Lat/Long
37.802025° -117.579529°

Well No.	TW-1
Boring No.	TW-1
Ground Elv.	4276 Ft amsl
Top of Casing:	2.5 Feet
Drilling Contractor:	TBD

Drilling Summary

Total Depth: TBD 2,000 Feet

Static WL: EST 75'

Borehole Nominal Diameters:	22" From 0' to 50' 14.75" From 50' to 2000'
Stickup Height:	2.5 Feet
Depth of Conductor Casing	50 Feet, HSLA Monument, 16" Dia
Rig:	TBD
Bits(s):	Tricone
Drilling Fluid:	Polymer and Water
Mud Parameters:	NA
Contractor:	TBD
Drilling License No:	TBD

Well Details

ID	Depth (ft)
C1	0 to 50'
C2	0 to 1500'
S1	± 1500 to 2000'

Casing Type:

C1	16" Dia. Steel A53B PEB, 0.312 Wall
C2	7" Dia. Steel A53B STC 0.312" Wall

Screen Type:

S1	7" Dia. Steel A53B STC 0.312" Wall STC Slotted 12R-2"-6"-.060"

Annular Summary

ID	Description	Depth (Ft)
A1	Type II Ready Mix Cement	0-100'
A2	Cement Bentonite Grout	100-1495
A3	Coated Bentonite Pellets	1495-1500'
A4	Washed #4 Gravel Pack	1500-2000'

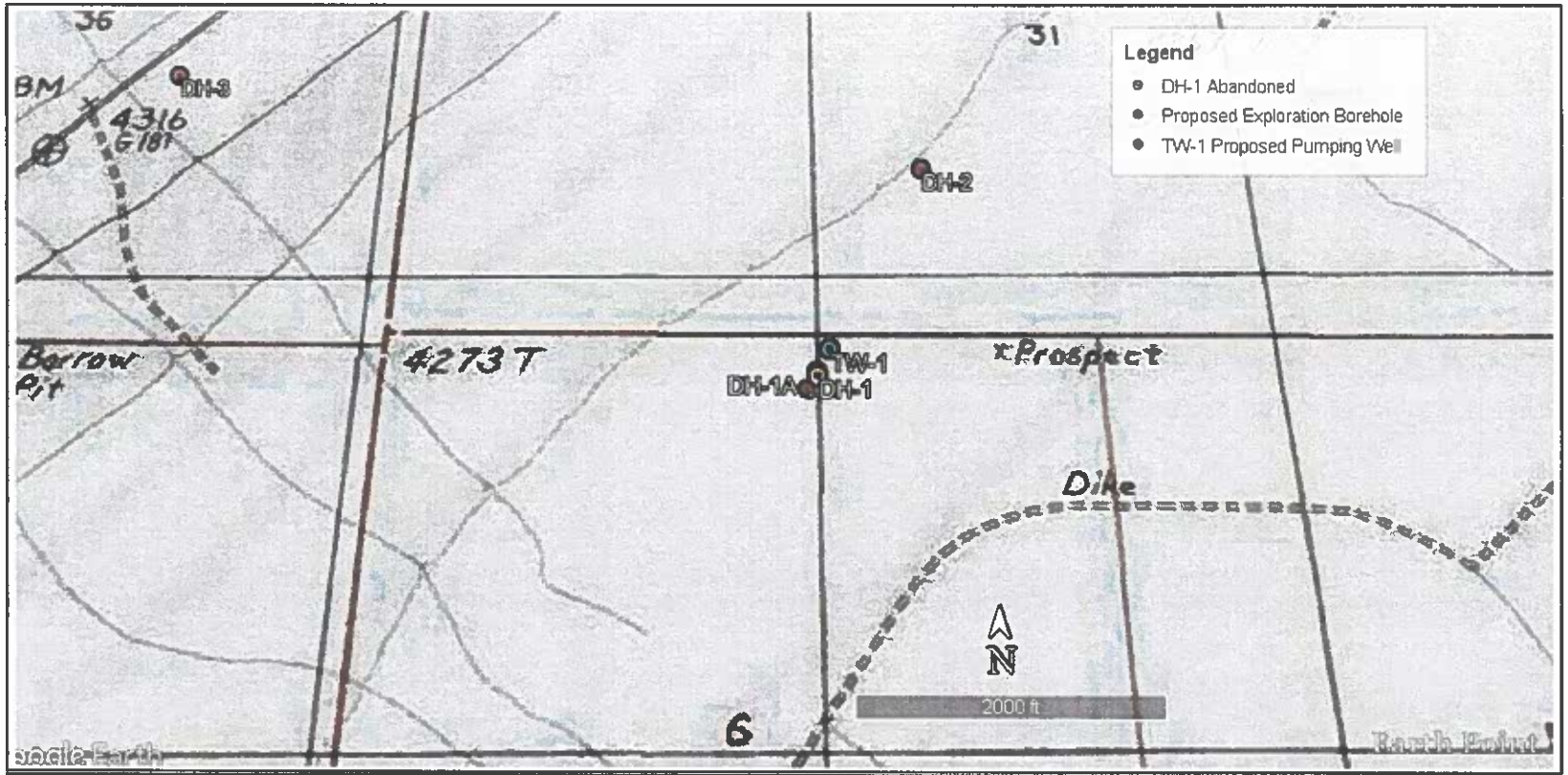
Expected Geology Based on DH-1 Corehole

- Paleo Lake Sediments; clay dominated with moderate sand and gravel
- Marginal Basin Fanglomerate; silty sand with gravel and clay
- Lower gravel unit, mixed clay with gravel
- Ash

Notes:

Prepared By:

confluence water resources LLC



GeoXplor Corp.

confluence water resources LLC

Exploration Borehole Location Map

Google Earth Imagery 1" = Feet	Phase 2 DMRE Borehole Application	**Figure 1**

Attachment 2

Additional Details for Drilling and Sampling

Fluid Management Plan - NAC 534B.140(1)(C)

Contamination Prevention/Cementing Plan - NAC 534B.140(1)(D)

Flow Monitoring and Plugging Plan - NAC 534B.140(1)(E)

Additional Details for GeoXplor's ACME Phase 2 - TW-1 Project, Clayton Valley Nevada

1. Project Description and Planned Operation

The Project is in Clayton Valley, Basin 143. The project includes advancement of a 2,000-foot-deep mud rotary borehole, and completion of a 7-inch diameter, steel test well (TW-1). The well will be airlift developed to remove latent drilling fluids. A step rate test and constant rate discharge test i.e., "pumping test" will be completed following well development activities. The data generated from the pumping test will be used to assess the hydraulic parameters of the lithium brine aquifer encountered in GeoXplor's DH-1 exploration hole.

The proposed test well (TW-1) will be in the NW ¼, NE ¼ of Section 6, T.2S, R.40E MDBM, Latitude 37.802025°N, Longitude -117.579929°W, located on unpatented mining claims held by GeoXplor Corp. The GeoXplor project, to include both the test well and subsequent pumping test discharge has been authorized by the Bureau of Land Management (BLM) under an Amended Notice of Intent (NOI) and bond rider acceptance for drill site reclamation and plugging and abandonment of TW-1, refer to BLM case file number NVN-101026, BNV002648. A copy of the approved Amended NOI and bond is enclosed for reference (Attachment 3).

Total discharge from the step test and the pumping test will not exceed 5-Acre Feet per the conditions of the DMRE well permit. Discharge from the pumping test will be managed on unpatented mining claims held by GeoXplor Corp, as approved by the BLM under the Amended NOI. The BLM approved discharge management plan is included in the Amended NOI which is enclosed for reference (Figures A and B of Attachment 4).

The primary objectives of GeoXplor's TW-1 project are as follows:

- Advancement of a 14.75-inch mud rotary borehole to a maximum depth of 2,000 feet below ground surface (bgs).
- Sampling of drill cuttings and chips for mineral assays.
- Completion of open hole wireline logging and geophysical surveys.
- Installation of a 7-inch diameter, steel well casing (see Attachment 1 for proposed well completion details).
- Well development via airlifting and swabbing.
- Installation of submersible test pump, totalizing flow meter, discharge pipe, and control berms to manage discharge.
- Completion of a step rate discharge test to assess well loss, formation loss and optimal pumping rates for a constant rate test.
- Completion of a constant rate pumping test to assess aquifer dynamics and storage coefficients of the lithium enriched brine aquifer.
- The pumping response at TW-1 will be monitored at a grouted in vibrating wire piezometer (DH-1A) to further assess aquifer dynamics.
- Water quality samples will be collected throughout the test to assess concentration of dissolved minerals.

The data generated from the pumping test will be used to assess the potential extent of the dissolved mineral resource deposit encountered at the GeoXplor claims. The results of water quality samples collected will be used to support mineral resource assessments and future Operating and Water Pollution Control Permits.

2. Proposed Exploration Disturbance

Disturbance will include minor modifications to access routes, drill site, and sump complex within the existing DH-1 drill site disturbance footprint. The provisions of the Amended BLM notice, N-101026 includes reclamation of 7,264 linear feet of road disturbance. Roads will be approximately 14 feet wide. The Amended NOI includes modifications to the existing DH-1 drill site footprint to accommodate additional area required for drilling the TW-1 test well. The original DH-1 drill site area will be modified with the approximate dimensions, 150 feet long by 150 feet wide.

The Amended NOI includes provisions for a sump complex located on the drill site with containment volume of 62 cubic yards. The sump will be constructed within the drill site disturbance footprint to contain drill cuttings and manage fluids.

The Amended NOI also includes additional disturbance area for placement of soil berms to manage pumping test discharge on GeoXplor claims, and overland travel area to equivalent 2.2 acres of additional disturbance. Berms will be constructed approximately 3.3 feet high with 2-foot crest widths at a 3:1 side slope angel.

The location of TW-1 is shown in Attachment 1. Existing access and planned surface disturbance are shown in the figures in Attachment 3. The Standardized Reclamation Cost Estimator, Version 1.4.1 Build 017b (Revised May 16, 2019) and the 2022 cost data file were used to generate the required reclamation cost estimate (RCE) for the Amended NOI. The amended bond includes cost for reclamation of TW-1 disturbance area, TW-1 well abandonment, and cost for reclamation of the sediment and drainage control structures, Best Management Practices (BMPs) for the TW-1 pumping test.

TW-1 well abandonment, along with other (total) surface disturbances included in the Amended NOI, as described above, was approved by the Bureau of Land Management, Tonopah Field Office (BLM) on October 27, 2022. The reclamation bond rider for increase in reclamation bond was received and accepted by the BLM on November 15, 2022, refer to BLM NVB002648.

3. Fluid Management Plan: NAC 534B.140(1)(C)

Drilling fluid will be maintained within a self-contained mud and shale shaker system which accompanies the rotary drill rig. A sump complex will be constructed within the drill site disturbance footprint to manage drill cuttings and fluids if necessary. The cuttings generated off the shale shaker will be transported and stored in a secure location offsite or buried in the onsite sump during reclamation. BMPs for discharge management, sediment, and drainage control structures will be utilized during construction, operation, and reclamation to minimize sedimentation from disturbed areas as described in Sections 5 and 6.

The step test and a constant rate pumping test will be controlled and managed on GeoXplor claims in accordance with a discharge management plan approved by the BLM under the Amended NOI (Attachments 3 and 4). This plan includes installation of approximately 2,000 linear feet of 4-6-inch

diameter lay flat pipe. The temporary pipe will be installed to convey discharge away from TW-1 and the test area where it can be managed and contained within natural topographical features on GeoXplor claims (discharge management area). Earthen berms will be constructed to further contain the discharge. The pipe network will be outfitted with an in-line valve system to evenly distribute the discharge within the discharge management area and reduce potential for erosion and localized ponding. The pipe network will be inspected twice daily for leaks. The discharge management area will be monitored at higher frequencies to direct distribution of discharge and inspect effectiveness of erosion control structures and containment berms.

A Temporary Discharge Permit (TDP) application will be submitted to the Nevada Division of Environmental Protection – Bureau of Regulation and Reclamation (NDEP-BMRR) upon authorization of a DMRE well permit for TW-1. A copy of the BLM approved discharge management plan will be submitted to NDEP-BMRR for further review and approval as part of the TDP application.

4. Contamination Prevention/Cementing Plan - NAC 534B.140(1)(D)

The proposed operation will include drilling a larger diameter surface conductor borehole to 50 feet below ground surface (bgs) for installation and cementing of surface conductor casing. The conductor borehole will be nominal 22-inch diameter. The driller will install 16-inch diameter steel surface casing which will be cemented in place from 50 feet bgs to the ground surface. The proposed surface conductor casing and the well cementing plan will address stability limitations and prevent potential contamination as follows:

- The surface casing will control any unforeseen vertical movement of formation fluids to the ground surface and will provide the required sanitary cement seal in compliance with the Nevada well regulations.
- The well will be sealed from approximately 1,500 feet bgs to the ground surface. A grout and cement seal will control formation fluids from vertical migration.
- The results of DH-1 water quality sampling did not indicate a freshwater aquifer exists within the project area. Contamination of freshwater aquifers will not occur at the proposed test well.
- Although there are no known freshwater aquifers in the vicinity of the Project, the grout and cement seal in TW-1 will protect potential distal freshwater aquifers from contamination and will prevent unforeseen blowouts or uncontrolled flows should they occur at the surface. Since the DH-1 exploration hole did not experience a blowout or uncontrolled flow, blowouts or uncontrolled flow is not expected at TW-1.
- This plan will prevent hole instability issues and near surface washouts which are typical for Clayton Valley.

The plan includes drilling a 14.75-inch diameter mud rotary hole through the cemented 16-inich diameter conductor casing to the target depth of the hole. Bentonite clay-based drilling muds will be used to manage any potential zones of different water quality and prevent migration of fluids.

During drilling, GeoXplor and its contractors will consistently monitor the flow of fluid to ensure no remedial measures are required after drilling operations have begun to prevent unwanted vertical migration of formation fluid. GeoXplor and their consultants will maintain close communication with the Nevada Division of Minerals (NDOM). All data from drilling, geological logging, wireline logs, or any sort of required data will be provided to NDOM as soon as it is available so that NDOM may recommend immediate remedial or corrective measures be taken during the drilling process if required. GeoXplor will

abandon the TW-1 borehole hole pursuant to Nevada Administrative Code (NAC) 534B.180 if vertical migration of formation fluid does not allow the hole to remain open for more than a brief period. GeoXplor is committed to working closely with the BLM, NDOM, NDEP, and NDWR in all aspects of the Project and will follow any guidance from the regulatory authorities with respect to any corrective or remedial measures.

Once the borehole is drilled, a 7-inch diameter, steel A53B STC well casing will be installed with slotted casing extending from approximately 1,500 feet bgs to the bottom of the hole (1,500 feet to 2,000 feet bgs). Blank steel A53B well casing will extend from 1,500 feet bgs to the ground surface. A gravel stabilizer will be installed by tremie pipe in the annulus around the perforated casing extending from the bottom of the hole to approximately 1,500 feet bgs. A layer of coated bentonite pellets will be installed from approximately 1,500 feet to 1,495 feet bgs, followed by installation of cement-bentonite grout via tremie pipe from 1,495 feet to 100 feet bgs. Type 2 neat cement will be installed by tremie from 100 feet bgs to the ground surface. The well will be installed in compliance with the Nevada well regulations. See Attachment 1 for the proposed TW-1 well completion details.

The test well will be plugged and abandoned in accordance with NAC 534B.180 within the timeframe limitations of the DMRE well permit.

5. Flow Monitoring and Plugging Plan - NAC 534B.140(1)(E)

Brine extracted from the TW-1 borehole as part of the drilling process will be managed and circulated through a mud containment and recirculation system on the drill rig, and if necessary, the onsite sump. The volume of brine loss or produced fluids will be estimated and recorded after completion of the borehole based on the volume of makeup drill water required to continue advancement of the hole.

Upon completion of the borehole, a steel well casing will be installed as described in Section 4. The well casing will be airlift developed to remove latent drilling fluids. Airlift discharge will be managed in the on-site sump. A step discharge test will be performed followed by a constant rate discharge test. Drawdown and recovery data will be monitored via pressure transducer installed through a sounder tube in the test well. Discharge rates and line pressure readings will be monitored and recorded throughout the test. Discharge rates will be recorded from a certified calibrated totalizing flow meter installed in-line with the discharge piping from the well. Confirmatory discharge measurements will be collected via the time/volume method at the point of discharge at the end of the pipe network shown in the discharge management plan (Figures A and B of Attachment 4).

The average flow rate and the total daily flow rate will be provided to NDOM daily. The total cumulative discharge from TW-1 will not exceed five (5) Acre Feet.

Water quality samples will be collected from the pumping test discharge and analyzed for dissolved minerals in addition to Nevada Profile 1 constituents as part of TDP requirements. Sediment and drainage control from the discharge will be monitored as described in Section 6.

TW-1 will be plugged and abandoned in accordance with NAC 534B.180 within the timeframe limitations of the DMRE well permit. The well will be abandoned by a Nevada licensed well driller in accordance with the conditions of the permit. Artesian conditions are not anticipated on the project. The well casing will be abandoned by placing cement-bentonite grout by tremie pipe from the bottom of the perforated well casing in an upward direction to a depth of 100 feet bgs. Neat Type 2 cement will then be placed by tremie

from 100 feet bgs to the ground surface. The remaining casing will be cut flush with the ground and the drill pad will be reclaimed in accordance with the conditions of the BLM NOI. The well abandonment report will be submitted to NDOM and NDWR within 30 days of completion of the abandonment. The timeframe for TW-1 abandonment will adhere to the conditions set forth in the DMER permit.

6. Additional Measures to Protect Water and Natural Resources

GeoXplor will conduct exploration operations to minimize ground disturbance and prevent erosion. Operations will be suspended when ground conditions are poor to eliminate potential for undue degradation of the environment during operation of equipment or vehicles.

BMPs for discharge management, sediment and drainage control will be used during all aspects of the project and through reclamation to minimize sediment loading on disturbed areas. Sediment control structures will include, but not be limited to, earthen berms, fabric and/or certified weed-free straw bale filter fences, siltation or filter berms, mud sumps and down gradient drainage channels to prevent unnecessary or undue degradation to the environment. Sediment traps (sumps), constructed within the drill site footprints, will be used to settle, contain drill cuttings, and manage drilling fluids. Weed-free straw bales or silt fences will be placed strategically around sumps and drill site footprint, as necessary to capture sediment. The sumps will be constructed with small animal escapement (egress) devices or structures. The sump area will be barricaded with construction fence or livestock fence panels to prevent entry from larger wildlife.

Based on a discharge management field reconnaissance with BLM, discharge is not expected to sheer or significantly pond within the discharge management area. The discharge is expected to infiltrate or evaporate within the proposed berm network. There were no impacts to waters or natural resources identified by BLM.

6.1. Stormwater Controls

While not anticipated due to the flat terrain of the Project, stormwater controls will be constructed or installed if necessary to prevent or minimize erosion and sediment loading. Drainage structures will consist of, but not be limited to, water bars, borrow ditches, and contour furrows sized to handle maximum seasonal water flows. Disturbed areas will be reclaimed in accordance with the reclamation plan to reduce erosion immediately after the project is completed. Once an area has been revegetated, notices and/or signs may be posted to allow vegetation to establish while reducing or restricting vehicular traffic.

6.2. Effluent Management

Drilling fluid and products used during drilling, well development, or well abandonment will be contained and deposited in tanks with overflow to sumps to ensure environmental protection. Overflow and mud sumps for drill water, fluids, and cuttings will be excavated within the limit of the drill site using a backhoe. The total containment volume of each sump complex will be approximately 62 cubic yards. One end of each sump will be sloped to provide egress for wildlife and/or other animals. Sumps will be backfilled after completion of drilling. If mud tanks are cleaned at the site, the contents will be contained in the sump and covered with backfilled soil materials.

7. Solid and Hazardous Materials

Non-hazardous project-related exploration waste will be collected and stored in approved trash bins and/or containers and hauled from the site by GeoXplor or their contractors for disposal at an approved landfill on a regular basis. The trash containers will be equipped with lids to prevent trash from blowing off-site. Waste that may be hazardous, have hazardous residue, or fluids, will not be disposed of in the trash bins. To minimize impacts during precipitation events, trash bins or containers will be regularly inspected for leaks and the lids will remain closed except when depositing debris. The containers will not contain materials that may attract wildlife (food items, etc.) and will be emptied on a regular basis. Hazardous substances required for the Project will include diesel fuel, gasoline, hydraulic fluid and lubricating grease. Approximately 200 gallons of diesel fuel and gasoline will be stored in fuel delivery systems on drill rigs and support vehicles. Approximately 50 pounds of lubricating grease and 40 gallons of hydraulic fluid will be stored on the rig or transported by lubrication trucks. Transportation of these materials will be conducted in accordance with applicable transportation permits and guidelines.

8. Reclamation

The duration of drilling will determine the reclamation schedule. Disturbance will be reclaimed at the earliest opportunity unless economically viable resources are identified. GeoXplor estimates that drilling and well testing activities will be completed in approximately two months from initiation of the TW-1 program. The timeframe for TW-1 abandonment will adhere to the conditions set forth in the permit. Earthwork and revegetation activities will be completed around the drill site as soon as well abandonment activities are completed, however the timeframe for completion may be limited by the time of year during which such activities can be effectively implemented. Site conditions and/or yearly climatic variations may require that this schedule be modified to achieve revegetation success. Reclamation activities will be coordinated with the BLM as necessary. Monitoring of revegetation success will be conducted annually for a minimum of three years or until revegetation standards have been met.

9. Resource Logging and Reporting

At completion of drilling GeoXplor may complete a suite of wireline logs to assess the geophysical parameters of the lithology drilled at TW-1. GeoXplor will also log the composition and stratigraphy of the drilled borehole. Upon completion of TW-1, GeoXplor and their consultants will complete a step rate and a constant rate discharge test from the well.

The average flow rate and the total daily flow rate from testing will be provided to NDOM daily. A geologic log of TW-1 will also be provided to NDOM within 30 days from completion of the hole.

GeoXplor will submit the results of the logs and analyses to the relevant regulatory authorities in a timely fashion and in accordance with all regulatory requirements of the DMRE permit.