**Mayor** John K. Handeland

**Manager** Glenn Steckman

**Clerk** Bryant Hammond



Nome City Council Jerald Brown Doug Johnson Mark Johnson Adam Martinson Jennifer Reader Meghan Sigvanna Topkok

#### **NOME COMMON COUNCIL SPECIAL MEETING AGENDA** MONDAY, MAY 17, 2021 at 7:00 PM COUNCIL CHAMBERS IN CITY HALL

102 Division St. • P.O. Box 281 . Nome, Alaska 99762 . Phone (907) 443-6663 . Fax (907) 443-5345

ROLL CALL

APPROVAL OF AGENDA

**CITIZENS' COMMENTS** 

**UNFINISHED BUSINESS** 

A. R-21-05-01 A Resolution Issuing a Moonlight Wells Permit to Northwest Gold Diggers, LLC for the 2021 Mining Season,

PAGE 2

**ADJOURNMENT** 

Presented by: City Manager

Action Taken: Yes\_\_\_\_ No\_\_\_\_ Abstain

## **CITY OF NOME, ALASKA**

## RESOLUTION NO. R-21-05-01

# A RESOLUTION ISSUING A MOONLIGHT WELLS PERMIT TO NORTHWEST GOLD DIGGERS, LLC FOR THE 2021 MINING SEASON

WHEREAS, the citizens of Nome desire to protect its potable water supply including aquifers for what is commonly known as Moonlight Springs and Moonlight Wells, and,

WHEREAS, the Nome City Council and the Nome Planning Commission have revised the Nome Code of Ordinances Chapter 10.20 to provide for better protection of the City's water supply by developing Best Management Practices and refining the Moonlight Wells Permit process, and,

WHEREAS, Bristol Environmental & Engineering Services Corp. (now known as Bristol Engineering Services Co., LLC) has prepared a document identifying the Moonlight Wells Protection Area that is graphically depicted in Figure 2 of the Technical Memorandum, Moonlight Wells Protection Area, Bristol Environmental & Engineering Services, January 2006, and,

WHEREAS, the Risk Ranking and Risk Reduction Process to estimate the level of the potential risk of adverse effects from various activities could have on the usability of the Moonlight Springs aquifer has been adopted by the Nome Common Council by Resolution R-o6-11-02, and,

**WHEREAS**, Northwest Gold Diggers, LLC, has applied for a permit to perform placer mining operations within the Moonlight Wells Protection Area; and,

**WHEREAS**, the proposed activity has been determined to be a major activity within the protection area; and,

**WHEREAS**, the Acting City Engineer (Bristol Engineering Services Co., LLC) has reviewed the application, and prepared a 2021 Moonlight Wells Permit based upon Best Management Practices; and,

**WHEREAS**, the 2021 permit application was made available for public comment from April 26th to May 17th and the City received one set of written comments regarding the proposed permit.

**NOW, THEREFORE, BE IT RESOLVED** the Nome City Council does hereby grant a Moonlight Wells Permit, as attached, for operations within the Moonlight Wells Protection Area to Northwest Gold Diggers, LLC for the 2021 mining season.

**APPROVED** and **SIGNED** this 17<sup>th</sup> day of May, 2021.

John Handeland, Mayor

ATTEST:

Bryant Hammond, City Clerk



CITY OF NOME P.O. Box 281 Nome, Alaska 99762 907.443.6663 www.nomealaska.org

# **MOONLIGHT WELLS PERMIT**

Date of Issuance:	April 24, 2021

Permittee: Shawn Pomrenke Northwest Gold Diggers, LLC P.O. Box 629 Nome, Alaska 99762

Authorizing Resolution: R-21-XX-XX

Authorized Activity: Placer Mining

This permit authorizes only the named permittee, Shawn Pomrenke, dba Northwest Gold Diggers, LLC, to operate a placer mine within the Moonlight Wells Protection Area on the following properties:

- MS 707 IXL Placer Claim
- MS 1212 Bench Claim No. 4 Placer

This permit is valid only for 2021.

The State of Alaska APMA # 2812 and associated permits issued by the State of Alaska for the APMA are adopted as part of this permit.

All placer mining and associated activities shall be in accordance with the terms and conditions set forth in this permit.

For the area proposed for placer mining, identified above, the following best management practices (BMPs) should be used:

# 1. <u>Fuel handling and storage</u>: (severe to high risk activity)

The owner has indicated that fuel for equipment will be hauled from outside the Moonlight Wells Protection Area (MWPA) in a 2,500-gallon fuel truck. A 500-gallon, double walled, fuel tank is proposed for on-site storage of fuels. Provide for a spill kit on the delivery truck for any spills during fuel transfers. All fueling performed from the 500-gallon tank to the excavator or wash plant will be continuously observed during the fueling operation, and the tank will be securely locked when not in use.

All equipment working within the permitted area shall have absorbent materials on it to be used in the event of a petroleum spill.

# 2. <u>Hazardous materials</u>: (severe to high risk activity)

Lubricants, solvents, and oils should be secured and properly stored at all times.

All waste oils and used filters should be carefully collected and disposed of at an approved waste oil receiving facility.

No hazardous, ignitable, corrosive, reactive or EP toxic materials shall be used or stored within the permitted properties.

A service truck will be used for daily servicing of equipment, but will be stored outside the MWPA when not in use.

# 3. <u>Trash handling on-site</u>: (high risk activity)

All trash generated at the mining site should be collected and disposed of at the municipal landfill. No trash or garbage shall be buried on site.

# 4. <u>Process water pumping and holding pond operations</u>: (medium risk activity)

An existing pond in M.S. 707 No. 3 Above Discovery on Little Creek Placer will be used for process water extraction. The pond is estimated to contain about 3 million-gallons and will be pumped 10 to 12 hours/day – estimated in the 30,000 to 40,000 gal./day range. The process water will flow through a settling pond on M.S. 1193 No. 5 Below on Cooper Gulch Placer and is intended to be returned to the extraction pond on M.S. 707.

Any increased withdrawal rates, resulting in a daily drawdown of the pond exceeding 12-inches, should be brought to the City's attention for review and additional monitoring of the static levels of the Moonlight Wells.

The holding pond, which is located just outside the Protected Area boundary, was created as a mining cut in 2018 and has no obvious signs of breakouts or breaching.

# 5. Depth of cuts for ore-bearing gravel extraction:

Excavation to depths of 35-45 feet are anticipated. If groundwater seeps or standing water is encountered, excavation will cease, and the area will be backfilled with a minimum of 2 feet of low permeability (high fines content) soils to cover the groundwater.

# 6. <u>Pit privies in the Protected Area</u>: (high risk activity)

There is no pit privy at the mining site. A "Porta Potty" may be used within the MWPA if needed.

# 7. <u>Restoration details</u>: (moderate risk activity)

The referenced DNR permitting process also covers restoration activities. The periodic inspections by the City Engineer or City representative should include a review of the restoration work and identification of any remedial work that is needed within the Protected Area. The BMP for this activity is compliance with DNR guidelines, and a rational approach to restoring lines and grades to disturbed lands; along with restoring natural drainage patterns to minimize erosion and down gradient silt transport.

Further conditions of the permit are:

- A. Any modifications to this permit must be submitted to the City Engineer for review and approval.
- B. The permittee shall allow the City Manager or his representative access to the permitted sites at reasonable times to conduct scheduled or unscheduled inspections or tests to determine compliance with the permit, City laws, and regulations.
- C. The permittee hereby agrees to hold the City of Nome harmless, and indemnify the City of Nome, from and against any and all loss damages to the Moonlight Wells municipal water supply caused by or resulting from the acts or omissions of the permittee, its agents, employees, subcontractors, suppliers or assigns.
- D. The permittee hereby agrees to provide proof of insurance in the form of an ACCORD certificate to the City of Nome, and, if requested by Nome, a copy of one or more policies referenced in the certificate.
- E. Failure to comply with conditions of the permit shall be grounds for immediate suspension of the permit by the City until corrective action has been taken and approved by the City. Non-compliance reports and a report of corrective action

shall be transmitted to the City Engineer for review. The City Engineer, upon notice from the City, shall review compliance reports and may recommend termination of the permit for repeated non-compliance with permit conditions.

F. The permit is effective upon approval of the Nome City Council, by Resolution and only when the City Engineer has issued a written notice to proceed.

The permittee, by signing the permit shall agree to the conditions contained therein.

DATED this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

CITY OF NOME, ALASKA

By: \_\_\_\_\_

City Manager

ATTEST:

Bryant Hammond, City Clerk

RECEIVED and ACKNOWLEDGED this \_\_\_\_\_ Day of \_\_\_\_\_, 2021.

Northwest Gold Diggers, LLC

By: \_\_\_\_\_

Permit applicant: Shawn Pomrenke

Attachments:

Moonlight Wells Permit Application Pomrenke – Plan of Operations 2021-2022 Season dated April 22, 2021 State of Alaska APMA # 2812

# **Moonlight Wells Permit Application**

Please answer all questions. The information provided on this application form will help determine whether your development activity poses a significant risk to the Moonlight Springs aquifer that is the City of Nome's public water system water source, and whether a development permit is required.

Development activity includes, but is not limited to excavation or alteration of terrain using mechanized equipment; building structures, storage or use of possible aquifer contaminants such as fuel or chemicals; well drilling; development of septic/wastewater systems; mining and other commercial or residential development activities within the Moonlight Wells Protection Area (see attached map).

Development does not include non-mechanized terrain disturbing activities, hiking, camping, berry picking; use of recreational off-road vehicles such as snow machines or 4-wheelers.

If the answer to any of the following questions is yes, your proposed activity is subject to the permitting requirements of the Nome Code of Ordinances Chapter 10.20 (O-06-10-02).

If you have questions regarding the information requested, or whether your activity is classified as a development activity, please contact City Hall at 907.443.6663.

## APPLICANT INFORMATION

1. Northwest Generation	old Diggers LLC 2.	Shawn Pomrenke	
Address Nome AK	99762	Address Nome AK 99762	
City/State (907) 304-110	99 Zip Code	City/State State Zip Code (907) 304-1199	Zip Code
Daytime Phone	SM pomrenke Queschoo E-mail Address	Fax Number	e-mail Address

#### **DEVELOPMENT ACTIVITY INFORMATION**

No □

Yes

1. Do you currently have any State, federal or local approvals or permits for your development activity?...

Note: Approval means any form of authorization. If "yes," please list below:

AMP multiyear	Approval #	Issuance Date	Expiration Date
		-	

No

Yes

# **DEVELOPMENT ACTIVITY INFORMATION**, continued

2. Have you applied for any State, federal or local approvals or permits that have not yet been received?

Approval Type	Application Date	

An additional page to list permits is found at the end of this application form

#### DEVELOPMENT ACTIVITY DESCRIPTION

1. Provide a brief description of your proposed activity below. Be sure to describe Best Management Practices to be included in your activity that will reduce risk of altering, contamination or diminishing the City of Nome's municipal water supply

See Attach	ed letter	
	End date discussed with Sha	wn Pomrenke on 04/23/2021
	x	11-15-2021
Proposed activity starting date: <u>5-15-2021</u>	_ Proposed activity ending da	ate: <u>11-15-2022</u>

2. Attach the following: • a <u>detailed description</u> of the development activity, all associated facilities, and land use, etc. (Be specific, including access roads, waste disposal sites, etc.); • a development activity <u>timeline</u> for completion of all major activities in the proposal; • a <u>site plan</u> depicting the location of the development within the Moonlight Wells Protection Area Boundary. Note: If the development is outside the protection area boundary, a permit from the City of Nome is not required, however your project may be subject to other regulatory requirements; • other <u>supporting documentation</u> that would facilitate review of the development activity. Note: If the development activity is a modification, identify existing facilities as well as proposed changes on the site plan.

#### Wastewater

	1.	Will a discharge of wastewater from industrial or commercial operations occur?	Yes	No
	2.	Will the discharge be connected to an already approved sewer system?	🗆	
	3.	Do you intend to construct, install, modify, or use any part of a wastewater (sewage or greywater) disposal system?	ם	
		<ul> <li>If you answered yes to 1-3, answer the following:</li> <li>1) What is the distance from the bottom of the system to the top of the subsurface water table?</li> <li>2) How far is any part of the wastewater disposal system from the nearest surface water?</li> <li>3) Is there a water well or exploratory boreholes within 100 feet of the disposal system?</li> <li>3) Is the surrounding area inundated with water at any time of the year?</li> </ul>		
	4.	Do you intend to dewater an excavation?	🗆	
	5.	Do you intend to dispose of water from piping, containers, tanks, or hydrostatic testing?	🗖	DZI.
	6.	Has the wastewater disposal been reviewed and approved by ADEC?	🗖	风
	7.	Does your development activity qualify for an ADEC general permit for wastewater?	🗆	Ø
	8.	Do you intend to engage in an activity that will disturb one acre or more of land?	🖾	
	9.	If you answered yes to 8, have you complied with stormwater pollution prevention requirements?	🗆	Ø
So	lid V	Vaste Disposal		
	1.	a) Will your development activity result in the construction, operation of a facility for the dimosal of solid works?	Yes	No
		(Note: Solid waste means drilling wastes, household garbage, refuse, sludge, construction or demolition wastes, industrial solid waste, asbestos, and other discarded, abandoned, or unwanted solid or semi-solid material, whether or not subject to decomposition, originating from any source. Disposal means placement of solid waste on land.)	🗳	Щ
		b) Will your development activity result in the treatment of solid waste at the site?	🗆	R
		c) Will your development activity result in the storage or transfer of solid waste at the site?	🗆	Ø
		d) Will the development activity result in the storage of materials for reuse, recycling, or resource recovery?		
		e) Will any sewage solids or biosolids be disposed of or land-applied to the site?		R
		f) Are your solid wastes tailings or waste rock from a mining operation?	🖾	
		g) Will you be disposing of, or stockpiling contaminated soil?	🗖	A

Land	Application of Chemicals Yes	No
1.	Will your development activity require the application of oil, pesticides, and/or any other broadcast chemicals, including fertilizers, dust palliatives?	X
Fuel a	and Hazardous Substance Storage	
1.	a) Will your development activity involve fuel or hazardous chemical storage in above ground or undergro storage tanks, buildings or yards? $See A + free A$	und
	b) If the answer to the above question is yes, what is substance being stored and quantity? 500gal double walled tank	
	c) What spill containment and leak detection systems are proposed for storage facilities	
	d) Have you provided the fire department or emergency response organization with information about your storage facilities and substances? $\square$ $\square$ $\square$ $\square$	r Ø
2.	Will your activity involve transportation or fuel or hazardous chemicals, or mobile storage (tank trucks) and dispensing of fuel? $See$ attacked letter	
Excav	ation and Fill	
1.	Do you plan to excavate/remove materials?	
2.	Do you plan to stockpile or place fill?	
3.	Do you plan to develop a quarry or material site?	Ø
Wells a	and Drilling	-,
1.	Are you planning to drill a water well?	
2.	Are you planning to drill exploratory boreholes to obtain samples or other geologic information?	Ø
3	Are you planning to drill an injection well?	Ø
Agricu 1.	lture/Livestock Will you be establishing an animal, livestock or dog lot operation?	Ø
2.	Will you be engaged in commercial agriculture or greenhouse operations?	
Water	Rights	
1.	If you plan to use water from a drilled well, have you obtained water rights from the State?	×

#### Permits

Provide a list of state and federal permits or other environmental regulatory authorizations you have already obtained for your activity or anticipate obtaining. Include general permits, notices of intent and plans that are required. List codes and regulations that may not necessarily result in a permit, as well. This listing may be limited to only those requirements that are intended to prevent pollution of groundwater, surface water and land/soils.

AGENCY	AUTHORIZATION TYPE or REGULATORY REQUIREMENT	DATE RECEIVED or EXPECT TO RECEIVE or COMPLY
DNR	multiyear Apma	1-17-2018

City of Nome Moonlight springs Wells permit

April 22, 2021

NORTHWEST GOLD DIGGERS LLC P.O. BOX 2005 Nome,AK 99762 Plan of operations 2021 2022 season

development and activity description

Activity includes stripping overburden off of designated pits and removal of pay gravels to a approximate depth of 35 to 45 feet. The pay gravels lie on top of a ancient beach consisting of fine gravel and sand. There is no need to disturb the bottom beach material as there is no gold values in it. After observing last years pit witch is below this years pit the water table is well below the new cuts. We will not be filling in the cuts from previous years and will be sloping the edges and conturing for erosion and seeding. Mining activity will not exceed past M.S. 707 or M.S. 1212.

Wash plant is still in its original location on MS707 ok claim. The wash plant will be moved to south end of MS1193 No 4 Below Cooper claim around July 1st 2021 if there is sufficient amounts of pay dirt found in new cuts. Mining commences at or around May 15th and ends around November 1st of every year. All make up water will come from outside the Moonlight springs protected area if the wash plant is moved. If the wash plant is moved fuel will be stored in a double walled 500gal tank with a 120volt electric pump when refueling is done it will be maned at all times. This tank will be refueled with a 2500gal fuel truck that will not be stored inside the moonlight springs protected area. There will be spill response equipment on site including absorbent pads, oil boom, Particulate oil absorbent (floor dry). The equipment that will be serviced inside the protected area will be refueled and serviced with a service truck equipped with a 700gal fuel tank and oil and grease and will be maned at all times. When servicing is finished the service truck will be stored outside the protected area. Any major repairs to equipment when possible will be done outside the protected area. Any spills or leaks in excess quantities that are reportable under CWA section 311 would immediately be reported tp the city and state of Alaska DEC. IF in the event of a spill or leak we would take immediate action to eliminate and contain. Second we would contact City of Nome and DEC. Third we would collect and remove all contaminated soils and debris from protection area to a designated remediation site outside the protected area.

Preventative maintenance and spill response equipment

1. If ground water is encountered excavation will stop and area will be back filled with a minimum of 2feet of low permeability (high fines content) soils to cover ground water

- 2. We have a spill response van and adequate equipment to respond to a spill in the event of one
- 3. Any oil leaks or seepage on all equipment would be repaired immediately
- 4. The most likely spill would be from a ruptured hose on equipment in the protected area and it is mandatory for all personal to do a daily inspection of equipment and equipment hoses. Any and all hoses that rare found to be damaged or worn will be replaced immediately.
- 5. The only fuel that will be stored inside the protective area will be stored in a 500gal double walled tank that would be used to fuel wash plant and excavator when fueling is being done it will be maned at all times. If the wash plant is relocated.
- 6. All equipment will be removed from the protected area at the end of the season except for the wash plant witch will be drained of all fuel and oil.
- 7. Wastewater, Questions 7 8and 9 relate to state of Alaska stormwater pollution prevention plan. (SWPPP). After contacting DEC Nicholes Dallman this is not required from the state for this project.
- 8. We will keep equipment in the protection area to a minimum for the operation.
- 9. Oil and fuel containment has always been a top priority to us and does not mix with gold mining and gold recovery.
- 10. I am a long time resident of Nome with a home that uses the city water source and take the protection of it very seriously. Its my belief that this mining project will not adversely affect the moonlight springs water shed and look forward to working with the city on this operation.

Sincerely yours,

Shawn and Steve Pomrenke

Northwest Golddiggers LLC



NEW CLAIR	ns BEING	ADD	ED			-
10#2812	U					lte
Applic	STATE OF A	ALASKA Mine in	Alaska (A	PMA)		
Single Year X Multi-year - St	art: 2017 Finish:	2022	APMA		(District/Year/Nu	mber)
What type activity are you planning to per	form?	Surface e	state of m	ineral prop	erties:	
Exploration/Reclamation	Access Equipment Suction Dredge	State Priva	(General) te (Patent te (Native	ed) Corp.)	State (Mental Hea Federal City or Borough	alth) (1)
Check, as appropriate, and indicate permi	t number, if any of the	following a	igencies h	ave previou	usly issued permits	for these
nineral properties:		PDES W	stewater	discharge r	permit #:	(2)
ADE&G - Habitat Permit No: EH-	Date expire	es	Stemator	discriminge i		()
BLM – Notice Authoriza	tion Oc	cupancy				
USACE Permit No(s) for this APMA #	POA		, POA		0. + 0.0.1	-
Other State or Federal Permit No: M	VILI-YEAR APPK	OVER A	ECLAN	DATION	PLAN # 2810	4
Mineral Property Owners: (3) Company name and contact name if applicable	Lessee: Company name and contact na	ame if applicab	(4)	Operator: Company name WORTH	e and contact name if applic	able DIGGER
Mailing Address for official correspondence: 4600 DE BANK KD SUITE 2	Mailing Address for official	corresponde	nce:	Mailing Addre	ass for official correspondence $629$	dence:
AWCHORAGE AK 99508				NOME	EAK 9914	52
Home phone# (winter): 1-907-563-3788	Home phone# (winter	-):		Home pho 1-907	ne# (winter): 7-443-587	5
Work phone# (winter): 1-907-563-3788	Work phone# (winter)	):		Work phor 1-320	ne# (winter): 0-630-726	60
Home phone# (summer): 1-907563.3788	Home phone# (summ	ner):		Home pho 1 - 907	one# (summer): 2-443-5875	5
Work phone# (summer): 1-907-563-3786	Work phone# (summ	er):		Work phon	ne# (summer): 1-636-72	60
Cell/Satellite: w/A	Cell/Satellite:			Cell/Satell	ite: N/A	
FAX: 1-907-563-2742	FAX:			FAX:	IA	
E-mail:	E-mail:			E-mail:	POMPENCE MAIL DOT	tom
Winter contact effective dates <u>fgnsfhnsf</u> to <u>AU. 9EAI</u> ?	Winter contact effect	ive dates		Winter con	ntact effective dates	dataa
Summer contact effective dates ALL YEAR to ALL YEAR	Summer contact effe	ctive dates			to <u>1/-</u>	dates
Project Name If Applicable: (6)	# of Workers:		(7)	Start-Up/S	Shut Down: (Month/	Day) (8)
Mining District: (9)	Applicable USGS Ma	ap: R-1	(10)	On What	Stream Is This Activ	vity? (11)
Legal Description of mineral properties to 100.3 ABOUE DISCOUERY CO NOS BELOW ON COOFER GU txL PLACER 707 NOS BENCH CLAIM NO.4 PLA	be worked and other DAN LITTE PLAN WICH PLACER L BELOW PLACE CER (1212)	projected ER CK ER (119 ER (119 OC	elated act (. (10 3) A 550	CIAHO	NPLACER/	(12)

Revised 10/2014

ACCESS OUTSIDE OF CLAIM BLOCK (16)
access across surface estates not owned by the State requires approval of the managing agency. It is the responsibility of the applicant to contact the owners of private property to obtain authorization for access.
A completed access map must be submitted with your application. Copies of USGS topographic maps at a scale of 1"=1 nile must clearly indicate the proposed access route from start to finish and include appropriate legal descriptions township and range) on each map sheet. The quadrangle map name should also be indicated (Healy A-3, etc.). Paper size should be limited to 8 ½" x 11". Do not tape maps together.
Access outside the claim block crosses what type of land(s)? State (General) State (Mental Health)
Does the proposed route of travel include use of RS 2477 access? Yes No. If the RS 2477 ROW has a State of Alaska RST number, please list
If not, do you wish to nominate the route for RST assertion? Yes INO.
Access is: Access is: To be constructed off of claim block Both
Indicate Type(s) of existing access: All Season Road: May be an improved dirt road intended to be used during all seasons of the year without causing lon term damage to the road.
Summer Cross Country Travel off of claim block that is not generally allowed Existing airstrip Airstrip to be constructed off of claim block
Winter Cross Country Travel that is not generally allowed - Travel is not authorized if damage could occur.
Will water be needed to construct ramps/ ice bridges? Yes X No.
If Ves estimated quantity of water will be used MA gallons/day
List all equipment and vehicles being transported:
NA 2 DIECEL 2500 CALLONIS
Are you transporting fuel? Yes No If "yes ", indicate type and amount:
a la a dua anna an a caucal DEUMS
Are you transporting other petroleum products? PT Yes No If "yes", indicate type and amount:
We you transporting other perioreum products?
15 - MOTOR BILS IN 55 GALGON DRUMS DIESEL IN FUEL TRUCK
Are petroleum products contained? (i.e., drums, bladders, steel tanks, etc.) Indicate size of containers:
IN SE ADUM DRIME AND 2500 GALLON FUEL TRUCK
How are petroleum products being transported? (i.e., skid-mounted tank; trailer; 55 gallon drums on skid; etc.)
NA POSE CO ALAI TONIEI
Indicate proposed dates for each period of cross country travel:
Revised 10/2014

Mechanical Placer Mining (e	.g., terrestrial o	PLACER MI	NING METHOD rations with doze	er or excavator)	,	(17)
Estimated cubic yards proc	essed annually	1: 50,00	60			
Suction dredge	Mechanical dre cal dredges. If	edge (e.g., ex information i	cavator or clam- s not applicable,	-shell) write "N/A." At	tach extra she	et if necessary.
	Drec	dge 1	Dre	dge 2	Dre	edge 3
Vessel ID (Name or Number)	NI	A	N	IA	NA	}
Vessel Dimensions	-		/		/	
Suction Dredge Intake Nozzle Diameter / Pump Size	Inches:	HP:	Inches:	HP:	Inches:	HP:
Mechanical Dredge Bucket Volume	Cubic Yards:		Cubic Yards:		Cubic Yards:	
Processing Rate	Yds.3/Hr.:		Yds. <sup>3</sup> /Hr.:		Yds. <sup>3</sup> /Hr.:	
Wastewater Discharge Rate	GPM:		GPM:		GPM:	
Maximum Water Depth	Feet:		Feet:		Feet:	
Average Daily Operating Hours						
Operation on Sea Ice (Yes/No)	Yes		Yes	/ No	Yes	/ No
Nill explosives be used?	Yes X No	EXP If "Yes", Ind	LOSIVES		_Amount:	(18
Nill explosives be used?	Yes 🕅 No	EXP If "Yes", Ind FUEL A	PLOSIVES licate: Type:		_ Amount:	(18
Vill explosives be used?	Yes X No	EXP If "Yes", Ind FUEL A arger Contai	PLOSIVES licate: Type: AT MINE SITE ners:	IN FUEL A	_Amount:	(18
Vill explosives be used?	Yes X No 55 Gallon or L Flowing Water is 100 feet).	EXP If "Yes", Ind FUEL A arger Contai rs: <u>406</u>	PLOSIVES licate: Type: AT MINE SITE ners:Feet (	<i>Tay FOSE</i> 10 Minimum dista	_Amount:	(18 (19 ally occurring
Will explosives be used?	Yes X No 55 Gallon or L Flowing Water is 100 feet). ound storage c	EXP If "Yes", Ind FUEL A arger Contai rs: <u>406</u> containers? [	PLOSIVES licate: Type: AT MINE SITE ners:Feet ( YesNo	<i>Tay FUSE to</i> Minimum dista Is berm are	_Amount:	(18 (19 ally occurring Yes No
Will explosives be used?	Yes X No 55 Gallon or L Flowing Water is 100 feet). ound storage o	EXP If "Yes", Ind FUEL A arger Contai rs: 406 containers? [	PLOSIVES licate: Type: AT MINE SITE ners:Feet ( YesNo RES / FACILITIE	<i>Tay FUSE</i> to Minimum dista Is berm are	_Amount:	(18 (19 ally occurring Yes No (20
Will explosives be used?	Yes No 55 Gallon or L Flowing Water is 100 feet). ound storage of pilities (Indicate	EXP If "Yes", Ind FUEL A arger Contai rs: 406 containers? [ STRUCTUR e number and Width	PLOSIVES licate: Type: AT MINE SITE ners:Feet ( YesNo RES / FACILITIE I size of each):	Tay FUEL H Minimum dista Is berm are S NO CA	Amount: & Gallons nce from natur a lined? AMD NE	(18 (19 rally occurring Yes PNo EDED (20
Will explosives be used?	Yes X No 55 Gallon or L Flowing Water is 100 feet). ound storage of allities (Indicate Feet	EXP If "Yes", Ind FUEL A arger Contai rs: <u>406</u> containers? [ STRUCTUR e number and Width _	PLOSIVES licate: Type: AT MINE SITE ners: 2500 Feet ( Yes PNo RES / FACILITIE I size of each): Tent/Tent	Tw Fust for Minimum dista Is berm are S WD CH reet Frame	Amount: Callons nce from natur a lined? [] AmD NC	(18 (19 ally occurring Yes TNO EDED (20
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Trench ID on ADL/BLM/USMS NUMBER	ADL/BLM/USMS NUMBER	1010 00 0010	http://dnr.alaska	a.gov/MapAK/.
Мар		Latiti	lae	Longitude (approximate)
NA				
/				
If more the	n 5 trenches please provide data in	h tabular format (h	p://dnr.alaska.go	v/mlw/forms/?tab=mining).
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	HMMENDED - ADDING & MORE SETTLING FOR
	WATER USE AUTHORIZATIONS (23)
Water usa or a Wate you may t amounts f (e.g. strea	age (including 100% recycle systems) may require authorization by either Temporary Water Use Authorization or Right Permit or Certificate. Information provided below will be used to determine the quantity of water that be authorized to use for your mining operation. When estimating water quantities, please estimate withdrawal typical of a dry summer and provide the maximum quantity that you may withdraw from a particular source arm, pond, groundwater, etc.) in a season.
A Tempor requested Water Rig	rary Water Use Authorization application may be initiated from this APMA application unless a Water Right is I. Please contact the ADNR, Water Resources Section at telephone number (907) 451-2790 if interested in a ht or for more information.
A. STAI	RT-UP WATER AND MAKE-UP WATER:
Is water w	vithdrawn from any lake, stream, creek, river, etc. (does not include recycling/settling ponds)? Yes No
What is th	e name(s) of the lake, stream, creek, river, etc.? EXISTING YOND NO NAME
What are	the months of water use needed (for example May 1 <sup>st</sup> through October 31 <sup>st</sup> )? 6-1-40 1045
Start-up	water: Is water required at the start of the season to fill your recycle/settling pond system?
	TES, complete information below).
Source:	Groundwater gain from cut / Seepage infiltration from stream
	Diversion ditch from stream. Number of days diverting from stream for start-up water:
	Water intake rate: gpm hrs/day
	Pump from stream. Number of days pumping from stream for start-up water:
	Number of water pumps for start-up water: Water intake rate (list for each pump): gpm
	hrs/day
Make-up	water: Is water required to maintain water level in your recycle/settling pond system?
Yes (if	YES, complete information below).
Source:	Groundwater gain from cut / Seepage infiltration from stream
	Ditch from stream. Number of days diverting from stream for make-up water:
	Water intake rate: gpm hrs/day
	Pump from stream. Number of days pumping from stream for make-up water:
	Number of water pumps for make-up: Water intake rate (list for each pump): gpm
	hrs/day Pump intake size: inches
B. REC	YCLE/SETTLING POND SYSTEM
Beaver pr	ands or other natural water features will not be permitted for use as settling ponds
- our or pe	si e a setting ponds.
Is a pre-se	ettling pond used?: X Yes No Is recycle used?: Yes No
How man	y ponds are used in the recycle system?
Recycle p	ond is pond # Settling pond is pond # 1, 2, 3
0	aviand 10/2014

WASTEWATER DISCHARGE PERMI	T APPLICATION (25
All mechanical placer mine, suction dredge, and mechanical dredge oper require an Alaska Pollutant Discharge Elimination System (APDES) per	erations that discharge to a water of the U.S. mit from DEC.
Do you want this APMA to act as an application or renewal for any of the	e following APDES general permits (GPs):
Mechanical Placer Miners GP* (open-cut terrestrial operations):	Yes No
Small-Size Suction Dredge GP (nozzle diameter of 6" or less):	Yes No
Medium-Size Suction Dredge GP (nozzle diameter greater than 6" to 1	10"): Yes No
Norton Sound Large Dredge GP (nozzle diameter greater than 10" or n	mechanical dredge): Yes No
Waterbody the discharge flows directly into, or would potentially flows	OW: NO DISCHARGE
Approximate coordinates of mine site:	
Latitude: Longitude:	
Source (e.g., DNR - Alaska Mapper):	Datum:
*Mechanical placer operations that do not elect coverage under the Mec obtain coverage under the Multi-Sector General Permit for Storm Water.	chanical Placer Miners GP may be required to . Contact DEC for additional information.
Optional* - Mixing Zone Request for Mechanic	al Placer Mine Operations
Do you wish to apply for a mixing zone and modified turbidity limit from I	DEC? Yes No
f a mixing zone is requested, provide the following: $N/A$	
Maximum Effluent Flow anticipated from your operation (GPM	M) [must be greater than zero (0)]
Distance to nearest downstream drinking water source; place water discharge	er mine water intake; and placer mine
*The fee for an authorized mixing zone is \$150 annually. A mixing zone is limit based on available dilution from the surface water. Permittees without standard for turbidity at the point of discharge into the surface water.	authorizes an increase in the permit's turbidity but mixing zones must meet the water quality
Certification Statement – applicable only to information (required for all DEC permit or mixing	n required for DEC authorizations
certify under penalty of law that this document and all attachments were accordance with a system designed to assure that qualified personnel pr submitted. Based on my inquiry of the person or persons who manage to for gathering the information, the information submitted is, to the best of complete. I am aware that there are significant penalties for submitting f and imprisonment for knowing violations.	e prepared under my direction or supervision in roperly gather and evaluate the information the system, or those persons directly responsible my knowledge and belief, true, accurate, and false information, including the possibility of fine
Responsible Party Name (First Last, Position) - Printed: 576	are Ismaente Ounter.
	P

AMM	ENED	2017-	2022	~	
	WETLAND	JURISDICT	IONAL DETI	ERMINATION	(26)
A Wetland Jurisdictional Determina every 5 years, or, when a new area with brand new APMAs and renew	ation (Wetland a is impacted red Multi-Year	d JD) determ . Certain info r APMAs.	nines if a US/ formation is re	ACE "404" permit is required. Please submit We	ed. A JD is required tland JD information
1. A wetland jurisdiction is require photo of your operation (a.) an	ed under Sec d answer a fe	tion 404. The	e Corps will o stions (b.)	conduct an offsite Wetland	JD when you provide a
a. Photograph of your operat must be clear, sharp, and	ion, with outli reproducible.	ne showing Sources of	all activity an photos inclu	d facility locations for the de (Please check)	next five years. Photos
Aerial photos from you not acceptable.) Pleas	r land manag e outline you	er; from a we	ebsite or othe print on the pl	er sources (Alaska Mappe hoto.	r printouts are generally
Photos taken by you.	On a map, m around your	ark locations	of where yo	u took photos. Please pro	vide all of the following:
	DUCKEL OF SHO	over cut), inc	lude an object	ct for scale.	
	top of hill or	t your plan o	operation)	an aprial view	
general photos of	your operatio	n	cation to get	an aerial view	
b. Other Questions - Do you	have: (check	all that apply	():		
Vegetation: Dlack	spruce I st	nrubs 🗌 tu	ssocks 🔲 n	nuskeg D Other //	
Non-pay Overburden:	None	Gravel	feet 🔲 (	Organic material	
Hydrology - Do you ha	ive:				
ponds that h	ave naturalized	ed			
d other areas	with saturated	d soil, or star	nding water		
frozen groun	id (permafros	t soils)			
How much of your pro	noned operat	ion area has	haan maula	a g	
What is the total size of	of your operat	tion (includin	been previo	Acres	
How many acres	of black spruc	e muskea f	rozen groun	detc ? O Acres	
How many acres of	to you think a	re uplands?	ALL AC		
			100 110		
2. Hire a wetland consultant to do	a JD for you	1.			
<ol> <li>Operators working in uplands of drained areas. As a service, O photos of their operations in up</li> </ol>	do not need a corps will sup plands.	a Corps perm ply an email	nit. Uplands stating that '	include areas such as old No Permit is Required' to	tailings or other well operators who supply
Your signature indicates acceptant operations, however it is not appea an Approved JD when your operat	ce of a Prelim alable. You n ion is in uplar	ninary Jurisdi nay at any tir nds or a cons	ctional Deter ne provide m sultent suppli	mination. (PJD) A PJD is ore information to clarify y ed JD is submitted.	standard for remote rour PJD. Corps will do
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Applicant Stripe Lamon	= 1/2× 1	tu	Land	, 7 22-22	2
Print Name	innic X)	Signature	OMX	1-01 001	_/
		orgnatare		Date	
Revised 10/2014					
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STREAM DIVERSON (27)A MAP OF COMPLETE STREAM DIVERSION IS REQUIRED: Plan Map of Operation included in the APMA should show the entire length of the diversion (i.e. where the water is diverted from the natural stream channel to where it returns to the natural stream channel). Please note: If you have a stream diversion structure; this structure may also qualify as a dam and be subject to the Alaska Department of Natural Resources Dam Safety Program per definitions provided in AS 46.17.900(3). Complete Section 24 (regarding a Dam) of this APMA. If you require further regulatory guidance regarding dams, please contact our Dam Safety and Construction Unit, Dam Safety Engineer at telephone number 907-269-8636 or for more information go to the Alaska Dam Safety Program website at: http://dnr.alaska.gov/mlw/water/dams/index.cfm Is stream diversion required? Yes (if YES, complete information below). X No Existing (Date Constructed ) To Be Constructed (Date\_\_\_\_\_ If a diversion is required or pre-existing, please contact your local ADF&G, Division of Habitat for Fish Habitat Permitting information. To facilitate permit issuance, please provide the following information: Is Stream Diversion? Permanent Temporary year(s) months Will diversion be reclaimed annually prior to freeze-up or be retained throughout the mine life? Annually reclaimed/returned to natural stream Maintained throughout mine life Dimensions of existing stream in diversion area: Length \_\_\_\_\_(ft) Top Width \_\_\_\_(ft) Bottom Width \_\_\_\_(ft) Depth \_\_\_\_(ft) Floodplain Width \_\_\_\_(ft) Dimensions of proposed diversion: Length (ft) Top Width (ft) Bottom Width (ft) Depth (ft) Floodplain Width (ft) Substrate type in diversion area: Bedrock Boulder Cobble Gravel Sand Silt/Clay Note: Diversion should approximate the existing stream in terms of meander bends, length, depth, stream width, and floodplain width. (Please provide plan and profile diagrams of diversion in Section 28, PLAN MAP OF OPERATION)

Item A

Revised 10/2014



FALASKA DIVISION OF MINING,

LAND and WATER

# MULTI-YEAR 2018-2022

# APPROVED RECLAMATION PLAN

# **APPROVAL # 2812**

The Alaska Department of Natural Resources, Division of Mining, Land, & Water, in accordance with Alaska Statute 27.19 (Reclamation Act), does hereby grant an Approved Reclamation Plan to:

ALASKA GOLD COMPANY 4600 DEBARR RD SUITE 200 ANCHORAGE AK 99508

NORTHWEST GOLD DIGGER LLC P.O. BOX 629 NOME AK 99762

This approval is for reclamation activity described in Application for Permits to Mine in Alaska # 2812.

This operation has been bonded through the State Reclamation Bond Pool, under bond APMA #2812, for a proposed disturbance of 14 Acres, for the 2018 mining season. The refundable portion of the bond pool deposit may be returned after reclamation is completed and approved by the Division of Mining, Land & Water.

In accordance with AS 27.19.050(c), you are required to file an Annual Reclamation Statement to serve as an annual report by December 31<sup>st</sup> each year this permit application is in effect, including photographs or video tape of the completed reclamation work. When submitting photography for approval, please photograph reclamation work prior to snowfall. Failure to submit this is a violation.

Effective dates of this approval shall be 1/17/2018 through 12/31/2022.

Changes to the intended Reclamation Plan described in Application for Permits to Mine in Alaska #2812 shall be submitted to this office in writing and approved in advance before such work can begin.

Approved: Jack Kerin

Permitting/Field Operations

Date: 1/17/18

#### NOTICE OF OPERATOR AUTHORIZATION -- STATE MINERAL LOCATIONS

All operators or lease holders submitting APMAs for operations on State mineral location's must submit a "Notice of Authorization" from the owner of record. This notice of authorization must name the operator and leaseholder (if different), the claims(s) by Name and ADL number(s), and the time frame (beginning and ending dates) for which the authorization remains in force. The Division of Mining, Land & Water will not issue any mining permits until we receive this Notice of Authorization. **Please include it with your APMA**.

**OPERATOR AUTHORIZATION** For AGC, LLC , harry W. Pelerson \_, OWNER of state claim(s) : Claim Name **ADL Number Claim Name ADL Number Claim Name ADL Number** see attached Exhibits A +B (Attach additional sheet if necessary) DBA NORTHWEST GOLD DIGGERSLIC. Have authorized Steve KomREN Address of Operator P.O. Boy 60 to operate on these claims from  $g_1$ VPJome OPS. Date **Owner's Signature** NOTARY Subscribed and sworn to before me this 26th day of July\_, 2017 MAEGAN PARKER For (owner) Notary Public State of Alaska (Signature of Notary) illim My Commission Expires Apr 16, 2020 My commission expires: 4/16/2020 OR (If the LESSEE and OPERATOR are not the same, both sections must be completed) LESSEE of state claim(s) : 1. VW GULD PIGHER CLC **Claim Name ADL Number Claim Name ADL Number** Claim Name **ADL Number** FACHED SEE ATTACHED (Attach additional sheet if necessary) to operate on these claims from 811 2070 1111 2022 have authorized 7-26-2017 Lessee's Signature Lessee's Address NOTARY: Subscribed and sworn to before me this 26th day of July, 2017. MAEGAN PARKER **Notary Public** For (Lessee) State of Alaska My Commission Expires Apr 16, 2020 (Signature of Notary) Margam My commission expires: 4/16 Operator Authorization (10/10)

# EXHIBIT A

# Claims

N	ame o	<u>of Claim</u> U.S. Mineral	Survey	Patent	Acreage
	1.	No. 3 Above Discovery On Little Cr. Placer	707	yes	17.13
	3	M 5 707 NO & ABUVE	1175	yes	-30.13

Said claims are situated in Sections: 11, 12, T.11S, R.34W, K.R.M.

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# EXHIBIT B Claims

Name of Claim	U.S. Mineral Survey	Patent	Acreage
1. I.X.L Placer Claim	707	yes	14.88
2. No. 4 Below Placer	1193	yes	16.00
3. Bench Claim No. 4 Placer	1212	yes	7.29
4. O.C. Association Placer	1371	yes	36.46
			74.63

Said claims are situated in Sections: 11, 12, T.11S, R.34W, K.R.M.

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MINE PLAN NARKATIVE FOR CONTINUMION OF MURTIUMEST GOLP VIGGERS COOPER GUILT MINING PROJECT. ADDING CLAIMS FOR CONTINUATION OF PROJECT SAID CLAIMS LOCATED IN SECTIONS 11, 12 T. 115 WOS BELOWE 1193 R34W, KRM I.XL PLACE 707 MOLY 75100 1193

P.

NOY BELOW BENCH NOY

1212

29

(2017-2013)

OCASSOCIATION 1371 Continuation of PROJECT would commence with RELOCATION OF THE WASH PLANT TO THE SOUTHEAST CORNER OF NO3 ABOUE FROM It'S CURRENT LOCATION ON OK. 707. THERE IS A EXISTING SETTLING POND FROM WHOMEVER MINED THERE BEFORE SIMATED DIRECTLY NORTH AND ADJACENT TO THE WORTHERN BOUNDY OF MS 707 OK CLAIM, I HAB BUILT A BYPASS ROAD IN 2015-2016 ON THAT LINE, THAT BYPASS ROAD WILL ACT AS A DAM-DIKE TO HOLP BACK SETTINGS FROM NEW PLANT SITE. THE PREVIOUSLY MINES PH FROM 2016 DIRECTLY South AND ADJACENT TOO THE NURTH BOUNDARY OF MSTOT OF WILL RE USED AS SETTING POND NO 2 FOR PROPOSED PROJECT. I WILL O A DOZER CUT THROUGH THAT ROAD TO MOVE THE FIRST SECTION OF OVERBURDEN South INTO THE 2015 PH TO SEAL THE PH SO THAT IT HOUDS WATER AND TO FILL THE HOLE. THE PLAN IS TO NOUE THE FIRST SECTION OF OVERBUREN 100'W X 150'L INTO THE 2016 HOLE, THEN REMOVE THE PAY DURT, THEN MOVE THE NEXT SECHON OF OVERBURDENEE INTO THAT HOLE THEN PROLEED UP THE INCL IN THAT. MANNER. MOST ALL OF PAYDIRT IS UNDERNEATH OF HE EXISTING GLACIER CREEK ROAD. AS THIS WORK IS COMMENCING WILL BUILD A BYPASS ROAD ALONGSIDE OF THE EAST BOUNDARY INE OF NO3 ABOVE CLAIM WHILE REMOVING PAY FROM UNDER HE CURRENT ROAD. WHEN THAT IS COMPLETED WE WILL REDUID URRENT ROAD, THEN REMOVE TEMPORARY BY PASS FROM THE

PLEPT Service Ford F THIS CONTRACTION CONTINUING PROJECT. RESPECTACLY,

MINE PLAN NARRAHUE PAGE TWO (2017-2018)

AFTER PLANT IS RELOCATED WE WILL SMOOTH AND LOW CONFER GULTTO THE SOUTH TWO THIRDS OF CLAIM WOS BELOW ON CONFER GULTTO THIS AREA OF NOS BELOW, AS YOU CAN SEE FROM THE GOOGLE THIS AREA OF NOS BELOW, AS YOU CAN SEE FROM THE GOOGLE FARTH PICTURE IS A OLD CRUSHER SHE 100% DISTURBED FORDY WORKING FOR LEVELING IS TO CREATE A FLAT ROUND. THE REASON FOR LEVELING IS TO CREATE A FLAT ROUND. THE REASON FOR LEVELING IS TO CREATE A FLAT ROUND, ROCK, SPECIAL SIZED ROCK, AS THAT IS WHAT THE OWNERS FAND, ROCK, SPECIAL SIZED ROCK, AS THAT IS WHAT THE OWNERS FAND, ROCK, SPECIAL SIZED ROCK, AS THAT IS WHAT THE OWNERS FAND, ROCK, SPECIAL SIZED ROCK, AS THAT IS WHAT THE OWNERS FAND, ROCK, SPECIAL SIZED ROCK, AS THAT IS WHAT THE OWNERS FOR THE GROWD, BEARING STRAITS NATIVE TO BOND THE CURRENT FUNCE ACRES FOR THE REMANDER OF THIS YEAR AND ADD 5 VINCE ACRES FOR THE REMANDER OF THIS YEAR AND ADD 5 WINE ACRES FOR THE REMANDER OF THIS YEAR AND ADD 5 WINE ACRES FOR THE REMANDER OF THIS YEAR AND ADD 5 WINE ACRES FOR THE ZOIT DO IS MINING YEARS. THE COMMON RECLAIMED WISH PLANT IS RELOCATED WE WILL HAVE ALL GROWND RECLAIMED WISH PLANT IS RELOCATED WE WILL HAVE ALL GROWND RECLAIMED WISH PLANT IS RELOCATED WE WILL HAVE ALL GROWND RECLAIMED WISH PLANT IS RELOCATED WE WILL HAVE ALL GROWND RECLAIMED WISH PLANT IS RELOCATED WE WILL HAVE ALL GROWND RECLAIMED WISH PLANT IS RELOCATED WE WILL HAVE ALL GROWND RECLAIMED WISH PLANT IS RELOCATED WE WILL HAVE ALL GROWND RECLAIMED WISH PLANT IS RELOCATED WE WILL HAVE ALL GROWND RECLAIMED WISH PLANT IS RELOCATED WE WILL HAVE ALL GROWND RECLAIMED WISH PLANT IS RELOCATED WE WILL HAVE ALL GROWND RECLAIMED WISH PLANT IS RELOCATED WE WILL HAVE ALL GROWND FOR CONSTRATION WE HAVE SETHING FORD AT 2 AND AT 3. THANK YOU FOR CONSTRATION WE HAVE SETHING FOR THE CONTINUE PROJECT.

HESPECTRUELY Stur Jorney



SETTLING YON PXISI OF 7-1-2017 # 2 150 × 150 × 9'D Item A. DAM SEHLING POND #3 300'x 150'W E'D DAM PUMPINP POND DAM, DIKE #4300'x200'x91 STARD PILE WASHS CURRENT POSIFICAL PLANT TO BE MOUSD IN 2017-LATE. LINE TO PLANT FROM PUMPING FOND #1 LURSHED BAL ROAD WASHED SAND WASHER ROCK CREEK StockPILE Stock PILE 6LACIER TN

Item A. MS 707 202 ABUE WO3 PUSO NOS BELUW © 2016 Google © 2013 Digital GI feet Google 1000 300 MS 707 No.3 Little Creac 17.13 acres. AREA MINED IN 2016+2015 AREA TO BE MINED LATE 2017 + 2018 CLAIMS MAP



Comments on Moonlight Springs Reserve mining exemption.

#### April 29, 2021

I am concerned about potential effects on Nome's drinking water with the proposed mining footprint proposed for 2021. Mining atop the aquifer less than a quarter mile from the City wells is not acceptable. Improper remediation could inject arsenic into the aquifer. This aquifer and the water the residents of Nome utilize has a far greater value to the city than the revenues and tax base of the mining operation.

I have spent some time scouting around the location a few years ago while employed by NSEDC and under permit by the City. The Aquifer that feeds our well field is contained in a limestone stratum that runs through Anvil Mountain and back almost to Banner Creek. Water gradually flows to the low point of the strata located near Moonlight Springs. Water can be in the Aquifer for several years making this journey. The more elevated portions of the stratum draws water in and it leaks out on the southern and western aspects of the stratum. Numerous seeps are evident on the eastern bank of Anvil Creek and along the southern face of Anvil Mountain. Some of the seeps are marked by stands of cottonwoods, which require a year-round water source. All these seeps are the result of positive pressure exuding water from the limestone. This pressure does decline a little over the winter when the Aquifer has very little water flowing into it. This drop in water level is what makes the possibility of contaminated water entering the limestone reservoir possible.

The limestone is currently exposed near the Cooper Gulch Corner on the old Glacier Creek Road. The strike and dip of the stratum is predominantly a tilt to the south with a lessor tilt to the west, the direction of the City well gallery. I believe the exposure of the limestone is an accident waiting to happen as well. The Limestone is dry there and so contaminates would be drawn into the Aquifer if spilled there.

What could possibly go wrong? Arsenic is a common mineral and a significant contaminant of disturbed ground here. Many of us remember why Arsenic Park was a superfund site that needed to be capped back in the 1990s. Let me tell a story that took place a little bit closer to this mine. In the 1980s, we had a dog team and we had a yard just to the west of the Birchwood Hanger and north of Lester Bench, perched on tailings overlooking a dredge pond now buried. The pond was fed by seeps from the tailings and seemed to be the remnant of the Cooper Gulch creek. On Warm summer days we watered the dogs with water from the seep. Our dog lot neighbor, Linda Robertson, raised a couple litters of pups that summer. She watered the pups daily with the seep water. By late summer she realized the pups were fatally flawed. They were deformed with short limbs that were awkwardly formed and the personalities of the pups was different. They had to be put down. She had tests run and found they had arsenic poisoning. Juvenile animals are far more susceptible than adults, so we did not notice problems with our adult dogs. Water flowing through the tailings from the base of Anvil Mountain to our former dog lot was far above the safe limit for arsenic. The tailings are a well-mixed batch of aggregate that made arsenic tea (leachate). The mine proposal suggests leaks or remediation of mining could involve placement of wash plant fines on the Limestone aquifer. Bad Idea!

I believe the Moonlight Springs Water reserve boundaries were draw with the consultation of a registered hydrologist. The idea was to protect the City water supply from exactly this issue. The last several years mining was essentially working areas that were already heavily impacted by mining and

WWII construction of the Satellite Field. The work proposed for the 2021 season is to work largely undisturbed ground. Mining the upper margins of the Aquifer is not likely to cause leaks or declines in water production but has the more serious possibility of contamination. The lower elevation work has potential for water loss but not contamination. Given the current water budget of the aquifer that is the lessor risk, that is mining below the water table in the aquifer.

Sincerely

**Charles Lean** 

# **Moonlight Wells Permit Process**



# **Permit Application Review Procedure**



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# RISK RANKING AND RISK REDUCTION PROCESS MOONLIGHT WELLS PROTECTION AREA

**BEESC Project No. 26094** 

March 2006

**Prepared for:** 

City of Nome, Alaska



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## **INTRODUCTION**

The purpose of the risk ranking exercise was to estimate the level of potential risk of adverse effects various activities could have on the usability of the City of Nome's water supply, commonly known as Moonlight Springs (MLS) and Moonlight Wells aquifer. Adverse effects typically relate to aquifer contamination or available quantity of water.

The results of the risk ranking process provide guidance for analyzing Moonlight Wells Permit applications and the stipulation of best management practices (BMPs) in permits. BMPs are temporary or permanent construction, operating and maintenance policies, and protective measures intended to reduce the risk of polluting or diminishing the Moonlight Springs and Moonlight Wells water supply to a level acceptable to the City of Nome. Typically, higher risk activities will have more stringent BMP requirements. Some low risk activities may have no special requirements.

The risk ranking process was subjective. Knowledgeable individuals assigned severity and likelihood values to activities based upon their professional judgment and predetermined criteria. The severity and likelihood values assigned by the group were based upon a worst-case perspective for the activity. The group acknowledged that risks generally can be reduced to acceptable levels through the implementation of engineering and administrative controls. These controls (BMPs) would be imposed upon activities in the Moonlight Wells Protection Area through State of Alaska and federal permits and authorizations, and through the City of Nome's Potable Water Supply Ordinance of the Nome Municipal Code and Moonlight Wells Permit.

## **RISK RANKING METHODOLOGY**

Twenty-two activities that may occur within the MLS protection area were identified and ranked with potential risk they presented to the City of Nome's water supply. The activities investigated are described in the section of this report titled *Results of the Risk Ranking Process*.

Risk ranking was based upon the likelihood and severity of adverse effects arising from an activity occurring within the protection area. The risk ranking methodology and results of the risk ranking process are described in more detail in the following sections.

1

#### **EVENT LIKELIHOOD**

Several factors were considered when determining the likelihood of detrimental incidents that could affect the MLS public water source. The factors included, but were not limited to, the following items:

- Whether location, climate, economics, or other factors affect the likelihood of an event;
- Whether the activity is likely to occur within the MLS protection area boundary;
- Whether the activity already occurs in the area;
- Whether the activity is commonly associated with a commercial or residential activity;
- Whether there have traditionally been problems and concerns related to the activity; and
- Whether the activity is regulated.

Each activity was assigned a likelihood rating between 1 and 5. The events having the lowest likelihood were rated as 1. Events having the highest likelihood were rated as 5. Table 1 Likelihood Criteria gives more detail on the criteria used to estimate the likelihood rating.

#### **EVENT SEVERITY**

Event severity was assigned using a method similar to assignment of likelihood values. The criteria for estimating the severity level is found in Table 2 Severity Level.

The criteria used to determine severity level were:

- Protection area or aquifer remediation costs;
- The cost of new public water system facilities or additional treatment to handle contaminants; and
- The length of time the water system might be out of service.

Severity values ranged from 1 through 5, with 1 being the lowest (least severe), and 5 being the highest (most severe).

# EVENT RISK RANKING

To determine an activity's risk ranking, severity and likelihood values were entered on the matrix shown below. The value found at the intersection of likelihood and severity ratings gives the ranking of potential risk. For example, where Severity is 2 (Medium-Low) and Likelihood is 3 (Medium), the Risk Ranking is Low.

	Likelihood – Increasing					
		1	2	3	4	5
asing	5	3	2	2	1	1
Incre	4	4	3	2	2	1
ity -	3	4	4	3	2	2
Sever	2	4	4	4	3	2
	1	4	4	4	4	3

Ranking of Potential Risk	
1 - Severe	
2 - High	
3 - Medium	
4 - Low	

The following tables give the criteria used to rate the likelihood and severity of activity related incidents.

Likelihood	Description	
High	A commonly occurring activity	
Med-High	An activity that is not unusual, yet not common	
Med	May occur several times during the lifetime of the system	
Med-Low	Rarely occurs	
Low	Not likely to occur	

#### Table 1 Likelihood Criteria

Table 2	Severity Level
---------	----------------

Severity Level	Remediation Cost	Cost New Facilities or Additional Treatment	Loss of Use
High	> \$10 million remediation cost	<ul><li>\$10 million initial cost or</li><li>\$1 million annual costs</li></ul>	Complete loss of resource (> 1 year)
Med-High	\$5 - \$10 million remediation cost	\$4 million initial cost or \$0.5 million annual costs	Temporary loss of resource (< 1 year)
Med	\$0.5 - \$5 million remediation cost	\$2 million initial costs or \$250,000 annual costs	Temporary loss of resource (< 1 month)
Med-Low	< \$0.5 million remediation cost	\$1 million initial costs or \$1,000 annual costs	Temporary loss of 2 million gallons storage (inability to use resource for 1 week)
Low	Minimal remediation costs	No additional treatment required	No loss of resource

## **RESULTS OF THE RISK RANKING PROCESS**

Each activity was assessed for potential risk, using the methodology described in the previous section. The ranking of potential risk for each of the activities is shown below.

# Activity: Aboveground Oil/Fuel Storage Tanks < 1000 Gallons

Likelihood	Severity	Ranking of Potential Risk	
High	Medium-Low	High	
Comments:	Comments:		
<ul> <li>Leaking piping most like</li> </ul>	Leaking piping most likely		
<ul> <li>Leaking tanks – unlikely</li> </ul>	Leaking tanks – unlikely		
• Overfills, spills, and fuel	Overfills, spills, and fuel handling likely sources		
Water contaminated by	Water contaminated by released hydrocarbons could be treated		

# Activity: Aboveground Oil/Fuel Storage Tanks > 10,000 Gallons

Likelihood		Severity	Ranking of Potential Risk
Medium-Low		High	High
Comm	ents:		
•	Leaking piping a likely source		
•	Leaking tanks		
•	Overfills, spills, and fuel handling are likely sources		
•	Large tanks would probably be related to industrial or mining activities		
•	Water contaminated by released hydrocarbons could be treated		

# Activity: Aboveground Oil/Fuel Storage Tanks > 1000 Gallons < 10,000 Gallons

Likelihood	Severity	Ranking of Potential Risk		
High	Medium-High	Severe		
Comments:	Comments:			
Leaking piping is a likely	Leaking piping is a likely source			
<ul> <li>Leaking tanks</li> </ul>	Leaking tanks			
Overfills, spills, and fuel	Overfills, spills, and fuel handling are likely sources			
This size range of tanks	This size range of tanks is the most likely to cause problems			

# Activity: Agriculture and Vegetation Control

Likelihood	Severity	Ranking of Potential Risk	
Low	Low	Low	
Comments:			
<ul> <li>There is little opportunity for agriculture within the Moonlight Springs area.</li> <li>Herbicides could be a concern if improperly used or stored</li> </ul>			

# **Activity: Animal Lots**

Likelihood	Severity	Ranking of Potential Risk	
Medium	Low	Low	
Comments:			
<ul> <li>Dog lots – it would take a large operation to impact the aquifer</li> </ul>			

# Activity: Chemical/Fertilizer Application

Likelihood	Severity	Ranking of Potential Risk	
Low	Low	Low	
Comments:			
• Same concerns as with use of pesticides, however, proper use of fertilizers would not pose much risk.			

# Activity: Discharge of More than 10,000 Gallons of Contained Water

Likelihood	Severity	Ranking of Potential Risk	
Medium-High	Medium	High	
Comments:			
• From tanks, hydrostatic	<ul> <li>From tanks, hydrostatic testing of pipes and tanks, and swimming pools, etc.</li> </ul>		
These waters may conta	<ul> <li>These waters may contain metals or hydrocarbons</li> </ul>		
<ul> <li>Discharge of these wate</li> </ul>	Discharge of these waters is subject to permits		

# Activity: Discharge of Less than 10,000 Gallons of Contained Water

Likelihood		Severity	Ranking of Potential Risk	
Medium-High		Medium-Low	Medium	
Comm	Comments:			
٠	From tanks, hydrostatic testing of pipes and tanks, and swimming pools, etc.			
•	These waters may contain metals or hydrocarbons			
•	Discharge of these waters is subject to permits			

# Activity: Excavation Dewatering of More than 250,000 Gallons

Likelihood	Severity	Ranking of Potential Risk	
High	Low	Medium	
Comments:			
Associated with mining	Associated with mining or gravel pit		
May introduce sediment	May introduce sediments into the aquifer		
If long-term dewatering	If long-term dewatering is required, could have an impact on available water quantity		

Likelihood	Severity	Ranking of Potential Risk		
High	Low	Medium		
Comments:				
A relatively benign activity; high likelihood drives rating				

## **Activity: Exploration Boreholes**

Likelihood	Severity	Ranking of Potential Risk	
High	Medium-Low	High	
Comments:			
<ul> <li>Activities that create a problems, unless proper</li> </ul>	• Activities that create a conduit from the ground surface into the aquifer could cause problems, unless properly sealed.		

## **Activity: Hard Rock Mining**

Likelihood	Severity	Ranking of Potential Risk
High	High	Severe

#### Comments:

• Hard rock mining that either provides a direct contaminant conduit to the aquifer, or interrupts the recharge of the aquifer, or removes the aquifer is a concern.

## **Activity: Hazardous Material Storage**

Likelihood	Severity	Ranking of Potential Risk
Medium-High	High	Severe
Comments:		
• The storage and possible release of solvents, acids, glycols, etc., could contaminate the aquifer for a very long time; household use of these materials is of less consequence than commercial and industrial use.		

#### Activity: Hazardous Waste Storage, Transportation, and Disposal

Likelihood	Severity	Ranking of Potential Risk
Medium-High	High	Severe
Comments: • Improper storage, transportation and disposal of Resource Conservation and Recovery Act (RCRA)-regulated wastes could cause problems if released into environment. Practices such as storing these wastes in appropriate containers and relying upon permitted		

Likelihood	Severity	Ranking of Potential Risk
Medium	Medium	Medium
Comments:		
• Small industrial shops (welding, auto shops) may be established within the protection boundary. Some of the consequences of these shops have been discussed in other categories, and may include concerns with solvents, fuels, waste oil, etc.		

# Activity: Land Application of Biosolids

Likelihood	Severity	Ranking of Potential Risk
Low	Medium-High	Low
Comments:		
<ul> <li>Typically, biosolids are a byproduct of wastewater treatment plants and can contain bacteria, viruses, and metals. Direct application of biosolids to land is regulated by permit. Permits are not issued unless it can be demonstrated that pathogens and metals are not an issue.</li> </ul>		

# Activity: Landfarming Contaminated Soils

Likelihood	Severity	Ranking of Potential Risk
Low	Medium-High	Low
Comments:		

A relatively low-cost method of cleaning up contaminated soils; may be ineffective in • relatively cold climates.

# Activity: Landfill Establishment and Operation

Likelihood	Severity	Ranking of Potential Risk
Medium-Low	Medium-High	Medium
Comments:		
• Other than small, private dumps, this activity would be done by the City, military or commercial venture, and would be regulated.		

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## Activity: Mobile Fuel Tanks, Tank Trucks

	Likelihood	Severity	Ranking of Potential Risk
	High	Medium-High	Severe
Comments:			
<ul> <li>This is an unregulated activity that could cause major problems in the event of an accident where a significant quantity of fuel is spilled.</li> </ul>			
Other concerns relate to poor fuel transfer practices that results in spills.			

# Activity: Placer Mining, Tailings Placement

Likelihood	Severity	Ranking of Potential Risk
High	Medium-Low	High
Comments:		

• Placer mining tailings and overburden placement is not considered a problem, however, there could be problems with turbidity and increases in naturally occurring metals.

• Materials that have been subjected to amalgamation pose a greater risk.

## Activity: Polluted Soil Disposal

Likelihood	Severity	Ranking of Potential Risk
Low	High	Medium

Comments:

• This activity includes landfilling of contaminated soils; contaminant concentrations must be within regulatory limits.

#### **Activity: Quarries or Excavations**

Likelihood	Severity	Ranking of Potential Risk
High	Medium	High

Comments:

- Could increase turbidity
- Dewatering could reduce water availability within the aquifer
- If a lake formed that fed into the aquifer, Moonlight Springs could be considered as "groundwater under the direct influence of surface water".

# Activity: Residential Development

Likelihood	Severity	Ranking of Potential Risk
High	Medium-Low	High
Comments:		
Has least amount of state and federal regulatory oversight		
Impacts could occur from wells, fuel tanks, uncontrolled dumping, and excavation		

# **Activity: Roads**

Likelihood	Severity	Ranking of Potential Risk	
High Medium-Low		High	
Comments:			
<ul> <li>Application of dust control palliatives is one concern.</li> </ul>			
Secondary impacts from	Secondary impacts from spills from accidents, runoff.		

# Activity: Solid Waste Disposal

Likelihood Severity		Ranking of Potential Risk	
High Medium-Low		High	
Comments:			
Uncontrolled dumping could cause problems, i.e., waste oil, glycols, solvents, and metals			
Small mining operations	Small mining operations		

# Activity: Stockpiling Contaminated Soil

Likelihood Severity		Severity	Ranking of Potential Risk	
Medium-High Medium		Medium-High	High	
Comments: • Particularly concerned with potential of contaminants to leach into ground beneath the stockpile			leach into ground beneath the	

# Activity: Underground Oil/Fuel Storage Tanks

Likelihood	Severity	Ranking of Potential Risk	
Low	High	Medium	
Comments:			
Not encouraged; most tanks are above ground			

Likelihood	Severity	Ranking of Potential Risk
Medium Medium-High		High
Comments:		
May be associated with mining		
<ul> <li>Controlled by existing permit program and strict effluent quality criteria; injection into drinking water sources not allowed if it would cause the violation of a drinking water standard/requirement.</li> </ul>		

# Activity: Wastewater Disposal Systems

Likelihood Severity		Ranking of Potential Risk	
High Medium-Low		High	
Comments:			
<ul> <li>Holding tanks</li> </ul>	Holding tanks		
Pit privies	Pit privies		
Conventional systems			
If properly constructed,	<ul> <li>If properly constructed, should not pose a problem</li> </ul>		

# Activity: Water Wells

Likelihood		Severity	Ranking of Potential Risk
High Medium-Low High		High	
Comments:			
<ul> <li>Primary concern is that wells provide a direct conduit to the aquifer whereby contaminants could be introduced.</li> </ul>			
<ul> <li>If properly constructed and abandoned, should not pose a problem</li> </ul>			

# Activity: Wetlands Fill

Likelihood	Severity	Ranking of Potential Risk	
Medium-High	Low	Low	

#### Comments:

• Structural fill – there may be risks associated with using fills consisting of arsenic-bearing soils

## **ACTIVITIES SORTED BY POTENTIAL RISK**

The following four tables list the various activities sorted by the potential risk ranking value assigned to them during the ranking process.

#### Table 3 Activities Having a Potential Risk Ranking of Severe

Aboveground oil/fuel storage tanks, > 1000 gallons - < 10,000 gallons
Hard rock mining, chemically treated mining solid waste tailings placement
Hazardous material storage
Hazardous waste storage, transportation and disposal
Mobile fuel tanks, tank trucks

## Table 4 Activities Having a Potential Risk Ranking of High

Aboveground oil/fuel storage tanks, < 1000 gallons
Aboveground oil/fuel storage tanks, > 10,000 gallons
Discharge of > 10,000 gallons of contained water from tanks, hydrostatic testing, swimming pools, etc.
Exploration boreholes
Placer mining activity, and placement of tailings
Quarries or excavation
Residential development
Roads
Solid waste disposal
Stockpiling contaminated soil
Underground injection wells
Wastewater disposal systems
Water wells

## Table 5 Activities Having a Potential Risk Ranking of Medium

Discharge of < 10,000 gallons of contained water from tanks, hydrostatic testing, swimming pools, etc.
Excavation dewatering, < 250,000 gallons
Excavation dewatering, > 250,000 gallons
Industrial activity
Land application of biosolids
Landfill establishment and operation
Polluted soil disposal
Underground oil/fuel storage tanks

# Table 6 Activities Having a Potential Risk Ranking of Low

Agriculture, vegetation control

Animal lots

Chemical/fertilizer application

Landfarming of contaminated soils

Wetlands fill – structural fills free of arsenic or other harmful components that could leach into groundwater

# ANALYZING AND REDUCING RISKS ASSOCIATED WITH A PROPOSED ACTIVITY

The potential risk of activities must be considered when issuing Moonlight Wells Permits for activities within the Moonlight Wells Protection Area. Risk must be reduced to an acceptable level through the use of technical/engineering and administrative controls. Many appropriate controls have been adopted in State of Alaska and federal regulatory and permitting programs. These State and federal controls, as well as those developed by the City of Nome, have been adopted as BMPs in the City's Moonlight Wells Permit program.

The following steps provide guidance for analyzing the risks associated with an activity in the Moonlight Wells Protection Area.

## **REVIEW PERMIT APPLICATION INFORMATION**

When a permit is requested for an activity within the protection area boundary, it should contain a good description of the proposed action. The permit application form will guide the applicant in describing the aspects of the project that have the potential for impacting the City of Nome's municipal water supply. The applicant should have also described what BMPs have been adopted to reduce the risk of groundwater contamination. Incomplete permit applications will not allow the reviewer to adequately make decisions. Additional information should be requested of the applicant until a thorough understanding of the activity is achieved.

#### **IDENTIFY POTENTIAL HAZARDS**

From the information contained in the permit application, and through discussions with the applicant, the permit reviewer will need to identify undesirable consequences that may arise from the proposed activity. The permit reviewer should ask the questions, "What can go wrong?" and "What are the causes of what can go wrong?" with the overall activity or its component parts. Case histories or case studies of similar activities can provide insight into the possible undesirable consequences of the proposed project.

## **ANALYZE HAZARDS AND RISKS**

After identifying what may go wrong and the possible causes, the permitter should seek to determine the probability or likelihood that the detrimental event will occur, and then the severity of the consequences if the event occurs. The combination of likelihood and severity defines the level of risk. An appropriate method to define levels of potential risk is described earlier in this

document. The levels of potential risk associated with particular activities may be appropriate in analyzing the proposed permit action, or additional analysis may be required for specific project activities, or different activities that have not yet been analyzed.

#### **REDUCING RISK**

If an activity is determined to have an unacceptable level of risk, the risk will need to be reduced or mitigated by reducing either the likelihood or severity of an event, or both.

Likelihood of an event could be reduced, for example, by one of the following approaches:

- Removing or eliminating the hazard entirely;
- Employing designs that reduce the likelihood of leaks and spills;
- Substituting a different, less hazardous process or activity; or
- Relocating the hazard to an area outside the protection area.

For example, eliminating significant gasoline storage, and utilizing diesel-fueled equipment will reduce the likelihood of spills contaminating groundwater with a highly mobile product and also the possible creation of RCRA hazardous wastes.

Another scenario might be storage of hazardous chemicals at a location outside of the MLS Protection Area and bring only the quantity needed for the short-term use to the site where they are used.

Severity of events can be reduced by:

- Providing barriers or isolating contaminant sources so escape to the environment is reduced; and
- Providing administrative controls, such as procedures, signage, training, and inspection.

Some examples of steps to reduce severity of events are leak testing of fuel tanks and lines, having emergency response plans, and training employees to report all spills.

#### APPLYING BMPS

Several hundred BMPs were identified for activities that may occur within the Moonlight Wells Protection Area. Most of the BMPs are regulatory requirements. In assessing a project and identifying opportunities to reduce risk, the permitter should identify BMPs that may apply to the activity, and whether the applicant has included them in the activity/project plan.

If the applicant has not included adequate BMPs in the project description, it is the responsibility of the permitter to:

- Discuss with the applicant the utilization of the BMPs identified as part of the Moonlight Wells Permit process, or adoption of alternative BMPs to reduce risk to appropriate levels and maintain regulatory compliance; and
- Ensure that the agreed upon BMPs are included in the project description and the final development permit.



Datum: NAD27 Projection: AK State Plane, Z8 CITY OF NOME MOONLIGHT WELLS PROTECTION AREA

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area are shown on the map. U K., Reger, R. D., Laird, G. M., rt on the Geology and Mineral R cal Surveys Public Data File 94-	Inconsolidated materials are n Pinney, D. S., Clautice, K. H., tesources of the Nome Mining •39, 19 pages, 2 maps.	ot shown Liss, S. District:
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ME

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No: 2507





Anvil Mtn

Notes:

Surficial geology based on Bundtzen, T. K., Reger, R. D., Laird, G. M., Pinney, D. S., Clautice, K. H., Liss, S. A., and Cruse, G. R., 1994, Progress Report on the Geology and Mineral Resources of the Nome Mining District: Alaska Division of Geological and Geophysical Surveys Public Data File 94-39, 19 pages, 2 maps.

Subsurface contacts between geologic units are approximate. The thickness of unconsolidated materials is inferred from available boring logs in the area.

The Moonlight Wells Aquifer is assumed to be present as shown based on the well logs for Moonlight Wells 1, 2, and 3. The lateral and vertical extent of the aquifer is not known

9,	000	10,000		11,000 A'
	Date Drawn: April 5, 2005		Figure 4	
	Drawn By: ME	Checked By: SJ	BEESC Project No:	25071