

STATE OF ALASKA
Application for Permits to Mine in Alaska (APMA)

Single Year Multi-year - Start: 01-01-18 Finish: 12-31-22 APMA (District/Year/Number): A20186118

What type activity are you planning to perform? (1) <input type="checkbox"/> Exploration/Reclamation <input type="checkbox"/> Access Equipment <input checked="" type="checkbox"/> State (General) <input type="checkbox"/> Mining/Reclamation <input type="checkbox"/> Suction Dredge <input type="checkbox"/> State (Mental Health) <input checked="" type="checkbox"/> Hardrock Exploration/Reclamat <input type="checkbox"/> Reclamation <input checked="" type="checkbox"/> Private (Patented) <input type="checkbox"/> Federal <input checked="" type="checkbox"/> Private (Native Corp.) <input type="checkbox"/> City or Borough		Surface estate of mineral properties: (2)
Mineral Property Owners: (3) Company name and contact name if applicable Pebble East Claims, Corp. Pebble West Claims, Corp. U5 Resources, Inc. contact: Tim Havey	Lessee: (4) Company name and contact name if applicable	Operator: (5) Company name and contact name if applicable Pebble Limited Partnership contact: Tim Havey
Mailing Address for official correspondence: Pebble East/West: 3201 C Street, Suite 505 Anchorage, Alaska, 99503 U5 Resources: 1500-1040 West Georgia Street Vancouver, BC V6E 4H1 Canada	Mailing Address for official correspondence:	Mailing Address for official correspondence: 3201 C Street, Suite 505 Anchorage, Alaska, 99503
Home phone# (winter):	Home phone# (winter):	Home phone# (winter):
Work phone# (winter): 907-339-2600	Work phone# (winter):	Work phone# (winter): 907-339-2600
Home phone# (summer):	Home phone# (summer):	Home phone# (summer):
Work phone# (summer): same	Work phone# (summer):	Work phone# (summer): same
Cell/Satellite:	Cell/Satellite:	Cell/Satellite:
FAX: 907-339-2601	FAX:	FAX: 907-339-2601
E-mail: timhavey@pebblepartnership.com	E-mail:	E-mail: timhavey@pebblepartnership.com
Winter contact effective dates <u>1-1-2018</u> to <u>12-31-2022</u> Summer contact effective dates <u>1-1-2018</u> to <u>12-31-2022</u>	Winter contact effective dates _____ to _____ Summer contact effective dates _____ to _____	Winter contact effective dates _____ to _____ Summer contact effective dates _____ to _____
Project Name If Applicable: (6) PebbleProject	# of Workers: (7) 10-120	Start-Up/Shut Down: (Month/Day) (8) <u>4-1-2018</u> to <u>12-31-2022</u>
Mining District: (9) Iliamna	Applicable USGS Map: (10) Iliamna C-7, C8, D-6, D-7, D-8	On What Stream Is This Activity? (11) No Fk and So Fk Koktyli R, Upper Talarik
Legal Description of mineral properties to be worked and other projected related activities (MTRS): (12) All or portions of Townships 2-7 South, Ranges 33-39 West, Seward Meridian, see attached table		
Internal Use Only: Date Application Received Complete: <u>12/17</u> Adjudicator: <u>[Signature]</u> LAS Entry: _____		

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Revised 10/2016

CID: 40660
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MINERAL PROPERTIES LIST

(13)

List only mineral properties with current and planned disturbance.

Attach additional sheets as necessary AND provide in electronic, tabular format if you are submitting more than 12 properties
DNR template available at <http://dnr.alaska.gov/mlw/forms/?tab=mining>.

	ADL/BLM/USMS #	PROPERTY NAME		ADL/BLM/USMS #	PROPERTY NAME
1.	See Appendix A		7.		
2.			8.		
3.			9.		
4.			10.		
5.			11.		
6.			12.		

INVENTORY OF EQUIPMENT

(14)

List all mechanized equipment to be used (make, model, type, size, purpose, and number of each, including pumps).

Attach additional sheets as necessary. Check this box if the equipment is currently located within the claim block:

See Appendix B

IN-STREAM ACTIVITIES and STREAM

(15)

List any equipment that will be crossing streams or used in-stream.

NA

List all stream crossings, suction dredge or pump locations, including unnamed streams.

	Stream Name/ Water Source	NAD 83 Datum (approximate) Coordinates can be obtained using Alaska Mapper http://dnr.alaska.gov/MapAK/		MTRSC ¼ ¼ Ex: F001S001N01 SWSW	Check boxes to indicate type(s) of activity		
		Latitude ddd.mmmm	Longitude -ddd.mmmm		Crossing	Dredging	Water Intake
1.	See Appendix C				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If in-stream activities and/or stream crossings are requested at more than 5 locations, please provide tabular data format
(DNR template available at <http://dnr.alaska.gov/mlw/forms/?tab=mining>).

Section Not Applicable ACCESS OUTSIDE OF CLAIM BLOCK

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.

Summer Cross Country Travel: Easements are needed to construct access outside of a claim block. "Construction" is the use of mechanized equipment to create or improve access, including dropping the blade or bucket, and/or adding gravel to the surface. Applications for LUPs may require sixty to ninety days to process and applications for easements may require six months to one year to process. A performance guarantee may be needed before a permit will be issued and will only be released after travel is completed and no negative trail impacts have occurred. As-built surveys after work is completed may be required as well.

All season roads may be an improved dirt road intended to be used during all seasons of the year without causing long term damage to the road. NOTE: it is strongly recommended that you contact the appropriate Regional Land Office as certain roads are subject to Generally Allowed Uses, and special permitting may be required for use of the route with off-road vehicles greater than 1500 lbs curb weight (like mining equipment).

A completed access map must be submitted with your application. Copies of USGS topographic maps at a scale of 1"=1 mile 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 1/2" x 11". Do not tape maps together.

Access is: Existing To be constructed off claim block Both

Access outside the claim block crosses what type of land(s)? State (General) State (Mental Health)
 City/Borough Federal Private Private (Patented) Private (Native Corp. Land)

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 No.

Indicate type(s) of existing access:

- All Season Road: _____.
- Summer Cross Country Travel off of claim block that is not considered Generally Allowed Uses
- Airstrip
- River
- Winter Cross Country Travel that is not generally allowed use (Complete Box 17)

Indicate type(s) of access to be constructed:

- Access Road
- Airstrip

Please describe your construction activities and include mitigation measures to protect water, fish and game resources. (A map outlining the route of construction activities is required):

Section Not Applicable WINTER CROSS COUNTRY TRAVEL

(17)

Winter cross country travel may be approved when ground conditions will support the movement of heavy equipment. Existing roads and trails should be used whenever possible. The winter operation of ground contact vehicles for off-road travel must be limited to areas where ground frost and snow cover are adequate to prevent damage to the vegetation mat and underlying substrate. A completion report is required within 30 days of travel completion. Travel is generally not authorized after April 15th of each year (extensions may be granted as conditions allow).

A Winter Cross Country Travel Route is required to obtain authorization. Is a winter travel access map attached?

Will water be needed to construct ramps/ ice bridges? Yes No

If Yes, estimated quantity of water will be used _____ gallons/day WaterSource: _____.

List all equipment and vehicles being transported:

Are you transporting fuel? Yes No If "yes", indicate type and amount:

Are you transporting other petroleum products? Yes No If "yes", indicate type and amount:

Are petroleum products contained? (i.e., drums, bladders, steel tanks, etc.) Indicate size of containers:

How are petroleum products being transported? (i.e., skid-mounted tank; trailer; 55 gallon drums on skid; etc.)

Indicate proposed dates for each period of cross country travel:

FUEL AT MINE SITE

(18)

Describe the total volume of fuel stored on site:

- 0-1,320 gallons (secondary containment recommended, but not required)
- 1,321-10,000 gallons (Self Certified Spill Prevention, Control and Countermeasure Plan (SPCC) required)
- 10,000+ gallons (Certified Engineered Plans required)

Indicate Distance Stored From Flowing Waters: Minimum 100 Feet (Minimum distance from naturally occurring water bodies required by DNR is 100 feet).

Are fuel containment berms around storage containers? Yes No Is berm area lined? Yes No

STRUCTURES/FACILITIES

(19)

Request use of existing facilities (Indicate number and size of each):

Area of Camp: Length _____ Feet Width _____ Feet

Frame _____ Trailer _____ Tent/Tent Frame _____

Request authorization to place temporary structures (Indicate number and size of each):

See Plan of Operations

Area of Camp: Length _____ Feet Width _____ Feet

Frame _____ Trailer _____ Tent/Tent Frame _____

Camp authorization not needed

If camp is on private land, provide camp name: _____ and camp location: _____.

Section Not Applicable

MINING METHOD

(20)

Mechanical Placer Mining (e.g., terrestrial open-cut operations with dozer or excavator, etc.)

Estimated cubic yards processed annually: _____

Suction dredge Mechanical dredge (e.g., excavator or clam-shell)

List all suction and mechanical dredges. If information is not applicable, write "N/A." Attach extra sheet if necessary.

	Dredge 1		Dredge 2		Dredge 3	
Vessel ID (Name or Number)						
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. ³ /Hr.:		Yds. ³ /Hr.:	
Wastewater Discharge Rate	GPM:		GPM:		GPM:	
Maximum Water Depth	Feet:		Feet:		Feet:	
Average Daily Operating Hours						
Operation on Sea Ice (Yes/No)	Yes <input type="checkbox"/> / No <input type="checkbox"/>		Yes <input type="checkbox"/> / No <input type="checkbox"/>		Yes <input type="checkbox"/> / No <input type="checkbox"/>	
Vessel Registration # / State	#:	State:	#:	State:	#:	State:

Location: Offshore / Salt Water Pond connected to stream
 Stream Pond isolated from stream
 Mine cut isolated from stream

Section Not Applicable

EXPLORATION TRENCHING

(21)

(Indicate locations on sketch sheet and/or topographic map)

Estimated number of trenches to be excavated: _____

Average Size: Length: _____ Feet Width: _____ Feet Depth: _____ Feet

How long will trenches be open? _____

Trench Location and Mining Claim Information			
Trench ID on Map	ADL/BLM/USMS NUMBER	NAD 83 Datum - Coordinates can be obtained using Alaska Mapper http://dnr.alaska.gov/MapAK/ .	
		Latitude	Longitude (approximate)

If more than 8 trenches, please provide data in tabular format (<http://dnr.alaska.gov/mlw/forms/?tab=mining>).

EXPLORATION DRILLING**(22)**

(Indicate locations on sketch sheet and/or topographic map)

Number of Holes To Be Drilled: 80 Type of Drill Used: Sonic/Diamond CoreEstimated Maximum Depth: Range Feet Diameter of Holes: Range InchesWill water be used? Yes No Water Source? See Appendix CHow Will Drill Holes Be Plugged Upon Completion? See Plan of Operations**Placer Drill Hole Location and Mining Claim Information**

Drill Hole ID on Map	ADL/BLM/USMS NUMBER	NAD 83 Datum - Coordinates can be obtained using Alaska Mapper. http://dnr.alaska.gov/MapAK/	
		Latitude	Longitude (approximate)
See Appendix D			

If more than 5 holes, please provide data in tabular format (<http://dnr.alaska.gov/mlw/forms/?tab=mining>).**EXPLOSIVES****(23)**Will explosives be used? Yes No If "Yes", Indicate: Type: _____ Amount: _____**DAM****(24)** No dam required Existing To be constructedProposed Structure: Temporary PermanentPurpose: Makeup water pond Settling/recycle pond Stream diversion Other: _____

Length: _____ ft Height: _____ ft Width At Crest: _____ ft Width At Base: _____ ft

Note: Height should be measured from the lowest point at either the upstream or downstream toe of the dam to the crest of the dam.

Water impoundment capacity (if known): _____ acre-feet

WATER USE AUTHORIZATIONS

(25)

Water usage (including 100% recycle systems) may require authorization by either Temporary Water Use Authorization or a Water Right Permit or Certificate. Information provided below will be used to determine the quantity of water that you may be authorized to use for your mining operation. When estimating water quantities, please estimate withdrawal amounts typical of a dry summer and provide the maximum quantity that you may withdraw from a particular source (e.g. stream, pond, groundwater, etc.) in a season.

A Temporary Water Use Authorization application may be initiated from this APMA application unless a Water Right is requested. Please contact the ADNR, Water Resources Section at telephone number (907) 451-2790 if interested in a Water Right or for more information.

A. START-UP WATER AND MAKE-UP WATER:

Is water withdrawn from any lake, stream, creek, river, etc. (does not include recycling/settling ponds)? Yes No

What is the name(s) of the lake, stream, creek, river, etc.? _____

What are the months of water use needed (for example May 1st through October 31st)? _____

Start-up water: Is water required at the start of the season **to fill** your recycle/settling pond system?

Yes (if **YES**, complete information below). No

- Source: Seepage infiltration from groundwater gained from cut and/or 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). No

- Source: Seepage infiltration from groundwater gained from cut and/or 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. RECYCLE/SETTLING POND SYSTEM.

Beaver ponds or other natural water features will not be permitted for use as settling ponds.

Is a pre-settling pond used?: Yes No Is recycle used?: Yes No

How many ponds are used in the recycle system? _____

Recycle pond is pond # _____ Settling pond is pond # _____

C. RECYCLE/SETTLING POND SYSTEM (continued).

Indicate Length (L), Width (W), and Depth (D) of each pond:

Pond # 1: L: _____ ft W: _____ ft D: _____ ft Pond # 2: L: _____ ft W: _____ ft D: _____ ft
 Pond # 3: L: _____ ft W: _____ ft D: _____ ft Pond # 4: L: _____ ft W: _____ ft D: _____ ft
 Pond # 5: L: _____ ft W: _____ ft D: _____ ft Pond # 6: L: _____ ft W: _____ ft D: _____ ft

Estimated hours per day that pump(s) will be used, return line size (in inches), operating pump rate (in gallons per minute), and water usage days per month:

Pump #1: _____ hrs/day _____ inches _____ gpm _____ days/month

Pump #2: _____ hrs/day _____ inches _____ gpm _____ days/month

Pump #3: _____ hrs/day _____ inches _____ gpm _____ days/month

D. CAMP WATER USE.

Is camp water used? Yes No

Maximum number of persons present in camp at a time _____

Camp water source: Well Haul Stream Spring Lake

Name of water source (if any): _____

Camp pump intake diameter: _____ Camp pump rate: _____ gpm _____ hrs/day

E. EXPLORATION ACTIVITIES.

Is water required for exploration activities? Yes No

If **YES**, What types of exploration activities are being performed? Trenching Drilling

If **YES**, How many pumps are used in the exploration activities? 2 Estimated hours per day that pump(s) will be used, return line size (in inches), operating pump rate (in gallons per minute), and water usage days per month:

Pump #1: 24 hrs/day 1.5 inches 25 gpm 30 days/month

Pump #2 identical to Pump #1

A map of your requested drilling water sources is required with the following information:

-MTRS sections,

-stream reaches or other water sources (please label, including take points if known)

-and drill hole locations

F. SUCTION DREDGING.

If suction dredging activity is occurring please ensure that you have completed the dredge table in Section (20) PLACER MINING METHOD.

Section Not Applicable

SECTION 404 WETLANDS PERMIT

JURISDICTIONAL DETERMINATION (CORPS JD) and MITIGATION STATEMENT

All Placer Mining applicants are required to contact the Corps of Engineers for submittal requirements.

A complete application for a Department of the Army (DA), U.S. Army Corps of Engineers (Corps) Section 404 permit includes a description of project impacts (contained in the APMA), a Jurisdictional Determination (JD) and a Mitigation Statement. The applications for the JD and the Mitigation Statement are contained in two Corps Supplements, which may be attached to this APMA. The Supplements may be downloaded from the Corps and DNR websites, or obtained directly from a Corps office in paper copy, by email, or mail. Please contact the Corps to determine what supplements are required.

Corps Supplement, Attachment 1, Jurisdictional Determination: Attachment 1 must be filled in and submitted to the Corps for **all new placer applications (New and Existing Operations)**. Photos of your mine site are required. Your JD will be valid for five years. Your photos will be used only for the purpose of conducting an offsite JD.

Corps Supplement, Attachment 2, Mitigation Statement: Alaska District regional mitigation policy for placer mining operations under this General Permit (GP) emphasizes avoidance and minimization of impacts; **compensatory mitigation is not required**. However, by regulation, a Mitigation Statement covering measures for avoidance, minimization, and compensatory mitigation, or, a reason why compensatory mitigation is not proposed, must be submitted to the Corps with each new APMA for projects that impact waters of the U.S.

Note:

- If your APMA requires, but does not include a JD or Mitigation Statement, your application will be considered incomplete. The Corps may also contact you for additional information. Please ensure your contact information on the front page is current.

Provide the Latitude and Longitude of the operation location (DD, NAD83):

Latitude: _____ Longitude: - _____

Source (e.g., DNR - Alaska Mapper): _____

Please list Corps permits previously issued for this site: POA- _____ - _____ , POA- _____ - _____

Certification Statement

The Alaska District will accept the APMA as a pre-construction notification, pursuant to 33 CFR 320.1 (c). Application is hereby made for a permit to authorize the work described in this APMA. I certify the information in the APMA, and any required Supplements, is complete and accurate. I future certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the operator/ applicant.

Operator or Agent:

Print Name

Signature

Date

Section Not Applicable

WASTEWATER DISCHARGE PERMIT APPLICATION

(27)

All mechanical placer mine, suction dredge, and mechanical dredge operations that discharge to a water of the U.S. require an Alaska Pollutant Discharge Elimination System (APDES) permit from DEC. See Page Two for a list of APDES permit fees.

Previously issued DEC-APDES Wastewater discharge permit #: _____

Do you want this APMA to act as an application or renewal for any of the 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 10"): Yes No
- Norton Sound Large Dredge GP (nozzle diameter greater than 10" or mechanical dredge): Yes No

Waterbody the discharge flows directly into, or would potentially flow: _____

Approximate coordinates of mine site:

Latitude: _____ Longitude: _____

Source (e.g., DNR - Alaska Mapper): _____

*Mechanical placer operations that do not elect coverage under the Mechanical Placer Miners GP may be required to obtain coverage under the Multi-Sector General Permit for Storm Water. Contact DEC to terminate a permit.

Optional* - Mixing Zone Request or Termination for Mechanical Placer Mine Operations

Do you wish to apply for a mixing zone and modified turbidity limit from DEC? Yes No

If a mixing zone is requested, provide the following:

Coordinates of discharge location: Latitude: _____ Longitude: _____

Maximum Effluent Flow anticipated from your operation _____ (GPM) [must be greater than zero (0)].

Distance to nearest downstream drinking water source _____ and downstream placer mine _____

Do you wish to terminate an active authorized mixing zone? Yes (APDES# _____) No

*A mixing zone authorizes an increase in the permit's turbidity limit based on available dilution from the surface water. Permittees without mixing zones must meet the water quality standard for turbidity at the point of discharge into the surface water.

Certification Statement – applicable only to information required for DEC authorizations (required for all DEC permit or mixing zone applicants)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Responsible Party: _____

Responsible Party Name (First Last, Position) - Printed: _____

Business Name (if applicable) - Printed: _____

Section Not Applicable

STREAM DIVERSION

(28)

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). 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)

Dominant substrate type (Choose Two): 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 29, PLAN MAP OF OPERATION)

PLAN MAP OF OPERATION

(29)

See Attached Figures

VICINITY MAP

Date Prepared:	Applicant Name:
STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES DIVISION OF MINING, LAND AND WATER	
MAP:	
Sec.(s) _____, Township _____, Range _____, Meridian _____	
Scale: 1" = _____	ADLs:
SHEET OF	APMA #

(Attach additional sheets, along with detailed explanations as necessary)

CROSS SECTION SKETCH

Section Not Applicable

BEFORE MINING

(30)

DURING MINING

AFTER MINING

	Date Prepared:	Applicant Name:
	STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES DIVISION OF MINING, LAND AND WATER	
	MAP:	
	Sec.(s) _____ Township _____, Range _____, Meridian _____	
	Scale: 1" = _____	ADLs:
	SHEET OF	APMA #

NARRATIVE

(31)

A narrative of the operation is required. Please use this space to describe the access, mining process, environmental protection measures and reclamation measures to be used for the duration of this permit. Use multiple sheets if necessary.

See Plan of Operations

2016 ANNUAL RECLAMATION STATEMENT

(32)

- Placer Mining
- Suction Dredging
- Hardrock Exploration

2017 TBA

APMA #: A20176118

Complete and return this statement by December 31, 2016. If you did not operate, fill in name, check bottom box, sign and return form.

In accordance with AS 27.19 (Reclamation Act):

I, Tim Havey hereby file an annual reclamation statement for the 2016 mining operation described in subject Application for Permits to Mine in Alaska. (Submission of this statement does not constitute reclamation approval.)

Volume of material disturbed in 2016: NA cubic yards (includes strippings and processed material).

Sluice days last season: NA Cubic yards of material processed daily: NA Annually: NA

Total acreage disturbed in 2016: 0.0565 acres. (Includes stripped areas, mining cuts, overburden and tailing stockpiles and disposal areas, temporary stream diversions, stream bypasses, and settling ponds). Federal operators should include area of camp and access roads.

Length NA feet and Width NA feet of stream diversion.

Stream diversion: Temporary Permanent (check one).

Total area reclaimed in 2016: 0.0565 acres.

Total un-reclaimed acres: 0 (This should match "total acreage currently disturbed" on the 2017 reclamation/signature page)

For the areas reclaimed, the following reclamation measures were used (check only measures that were used). You must include photographs or videotapes of the completed reclamation work:

- Spread and contoured tailings
- Spread topsoil, vegetation, overburden muck or fines on the surface of contoured tailings
- Reestablished flood plain with stream channel in stable position
- Ponds are reclaimed
- Backfilled and reclaimed temporary stream diversions
- Camp removed, cleaned up and left free of debris
- Hardrock Exploration : Complete and submit an electronic Annual Reclamation Report

Other reclamation measures taken:

Vegetation preservation, replacement; ground stabilization; re-seeded as necessary

did not operate in 2016 and therefore did not conduct reclamation.

Relationship to Claim(s)
 Owner Lessee Operator
 Agent For: _____

Signed _____ Date 12/8/2017





RECLAMATION PLAN

(Disturbed Area 5 Acres Or Greater or BLM Notices)

RECLAMATION PLAN



LETTER OF INTENT TO DO RECLAMATION

(Disturbed Area Less Than 5 Acres)

(33)

In accordance with Alaska Statute 27.19, reclamation is required of all mining operation. Reclamation bonding is required of operations with disturbance of 5 acres or greater. Completion of this application will meet the requirements for a "Reclamation Plan" for operations 5 acres and larger in size and "Letter of Intent To Do Reclamation" for operations under 5 acres. If you do not intend to use the reclamation methods presented below, please provide additional information concerning your plans for reclamation under separate attachments.

BLM requires that the reclamation plan be consistent with §43 CFR 3809.420, Performance Standards for the Surface Management regulations. Refer to 43 CFR 3809 or the BLM minerals website available at <http://www.blm.gov/ak/st/en/prog/minerals.html> for more information on what is needed for a reclamation plan.

Total acreage currently disturbed: 0 acres. This should match: "Total Unreclaimed Acres" on your 2017 Annual Reclamation Statement for Small Mines, or line #7 on your 2018 Bond Pool Renewal Form. Disturbed ground includes all unreclaimed mining and exploration activity (excluding camps and roads) since October 1991. Federal operators must include areas of camps and roads.

New acres to be disturbed in 2018 0.37 acres. Total acreage (currently disturbed plus new acres): 0.37 acres.

Acreage disturbed by land status: 0.37 State (general) _____ State (Mental Health) _____ Private _____ Federal

Total acreage to be reclaimed in 2018: 0.37 acres; and:

Reclamation conducted concurrently with the exploration. Reclamation will be conducted at the end of the exploration season

Total volume of material to be disturbed in 2018: 10 cubic yard. (Including strippings and overburden to be removed. (1 acre of disturbance is equal to 4,840 square yards).

The following reclamation measures shall be used. (These measures are required by law. Those that do not apply may be crossed out; but, an explanation must be given as to why these measures are not necessary at your site.)

- Topsoil, vegetation, and overburden muck, not promptly redistributed to an area being reclaimed, will be individually separated and stockpiled for future use. This material will be protected from erosion and from contamination by acidic or toxic materials and will not be buried by tailings.
- The area reclaimed will be reshaped to blend with the surrounding area using tailings, strippings, and overburden and be stabilized.
- Stockpiled topsoil, overburden muck, will be spread over the contoured exploration sites to promote natural plant growth such that the area can reasonably be expected to revegetate within five years. Stockpiled vegetation will be spread over topsoils.
- Exploration trenches will be backfilled. Brush piles, stumps, topsoil, and other organics will be spread on the backfilled surface to inhibit erosion and promote natural revegetation. Exploration trenches shall be flagged and signs posted to notify the public of the existence of the open trenches. All exploration trenches shall be reclaimed by the end of the exploration season in which they are constructed, unless specifically approved by the DMLW.
- Shallow auger holes (limited to depth of overburden) shall be backfilled with drill cuttings or other locally available material in such a manner that closes the hole to minimize the risk to humans, livestock and wildlife.
- All drill hole casings shall be removed or cut off at, or below, ground level. All drill holes shall be plugged by the end of the exploration season with bentonite holeplug or equivalent slurry, for a minimum of 10 feet within the top 20 feet of the drill hole. The remainder of the hole will be backfilled to the surface with drill cuttings. If water is encountered in any drill hole, a minimum of 7 feet of bentonite holeplug or equivalent slurry shall be placed immediately above the static water level in the drill hole. Complete filling of the drill holes, from bottom to top, with bentonite holeplug or equivalent slurry is also permitted and is considered to be the preferred method of hole closure during which they are drilled, unless otherwise specifically approved by the DMLW.
- If artesian conditions are encountered, the operator shall contact the DMLW (Kindra Geis (907) 451-2790) or the DEC (Tim Pilon at 907 451-2136) for hole plugging requirements.
- All buildings and structures constructed, used or improved, on State land, will be removed, dismantled, or otherwise properly disposed of at the completion of exploration. The campsite will be cleaned up and left free of debris. In consideration of potentially significant historic properties/cultural resources, please do not remove or disturb any buildings, structures, objects, or artifacts that were located on the site prior to the current operation without preauthorization from SHPO (Contact Mckenzie Johnson of SHPO at (907) 269-8726 or mckenzie.johnson@alaska.gov).

IMPORTANT: 1. Alternative reclamation measures may be approved if the reclamation measures presented above are not applicable to your site. Please explain in separate correspondence. Submit a sketch and describe additional reclamation measures you propose to conduct at your operation. Reclamation measures must comply with AS 27.19.

2. Federal land managers may require reclamation measures different to those identified above.

BONDING: In accordance with AS 27.19, bonding is required for all operations having a mined area of \geq five acres on State Land. This area must be bonded for \$750.00 per acre, unless the miner can demonstrate that a third party contractor can do the needed reclamation for less than that amount. A Statewide bonding pool has been established and may be joined by completing the bond pool application form. No reclamation plan approval goes into effect until the bonding pool deposit and annual nonrefundable fee are paid. Federal land managers may have additional bonding requirements. Use bond form to calculate area of disturbance for bonding.

Tim Havey

Printed name (Applicant)

Signature (Applicant)

Relationship to Claim(s)

Owner Lessee Operator
 Agent For: _____

Date: 12/8/2017

APMA #: A20176118

PEBBLE PROJECT 2018 Narrative of Operations (APMA Section 31)

The Pebble Limited Partnership (PLP) operates an advanced exploration program on Alaska State mining claims registered to the Pebble East Claims Corporation, Pebble West Claims Corporation and U5 Resources Inc. These claims occupy a contiguous 416-square mile area generally located northwest of Iliamna Lake near Iliamna, Alaska (Iliamna C7, C8, D6, D7, D8 USGS Topographic Maps, Seward Meridian) (Figures 1-6). Individual claims are listed in Appendix A for each corporation.

Since 2014, PLP has conducted general care and maintenance activities on the claim block, including minor repairs to existing structures, and continued inspection of retained facilities. All previous exploration sites have been fully reclaimed in accordance with AS 27.19 and 11 AAC 97.

Beginning in 2018, PLP intends to renew field investigations within the claim block to support permitting efforts and advance design options for potential mine facilities. Field activities described in this application are expected to begin on or about May 1, 2018 and continue through the remainder of 2018. Planned activities for the 2018 field season include:

- Sixty-one geotechnical boreholes
- Nineteen diamond-drilled core boreholes
- Minor repairs to Borehole 3127
- Routine inspections

Field activities planned for subsequent years under this permit will be submitted to ADNR in advance for review and approval as required.

1. GENERAL FIELD OPERATIONS

1.1 SITE ACCESS

There are no roads to the claim block. PLP (and its predecessor, Northern Dynasty Minerals) have conducted all field activities via helicopter and will continue to do so for the renewed permit term. Snow machines may be used for short distance travel around field installations, but their use is restricted to areas where snow cover is sufficient to protect underlying vegetation.

1.2 TEMPORARY FIELD INSTALLATIONS

PLP maintains several small field installations within the claim block that serve as staging and storage areas or data collection sites. Locations are selected to minimize any potential impact to vegetation or water sources, prioritizing existing rock or gravel areas with limited vegetation. The footprint of each site is kept as compact as practicable, with all structures and bulk supplies stored on tundra pads, racks or elevated platforms. The general locations of each installation are shown on Figures 4, 5, and 7.

1.2.1 Main Supply Depot

The Main Supply Depot (MSD) was initially constructed in 2004 and serves as the primary storage and staging area for field operations. The site occupies approximately 2.5 acres of a gravel bluff in the west zone

Pebble Project

of the deposit (SE1/4 SE1/4 of Sec 21, T3S R35W and the NE1/4 NE1/4 of Sec 28, T3S, R35W) (ADL Nos. 516811 and 516874) (Figure 7).

Multiple temporary wood frame buildings and platform tents provide sheltered storage for mechanical equipment, drilling equipment, environmental supplies, and variety of small parts and tools. Small quantities of drilling fluids, motor oils, and antifreeze are stored in weather-proof shelters. All temporary structures are constructed on elevated platforms or placed on tundra pads.

Other items such as drill rods, lumber, tundra pads, outhouses, fuel containments, rig supports, are stored with the MSD yard on racks or elevated platforms. Figure 8 shows a categorical layout of the MSD at 1":50' scale.

1.2.2 Watershed

The Watershed site is located approximately 0.75 miles east of the MSD in the SW1/4 SE1/4 of Sec 22, T3S, R35W (ADL No. 524712) (Figure 7). The site consists of three temporary buildings constructed on elevated platforms: one Quonset-style building with a corrugated metal roof (14' x 16') that served as a light machine shop, and two wood frame buildings (9' x 38'; 10' x 16') used to store hoses and miscellaneous hand tools and field supplies. A small generator shed is attached to the Quonset hut. One 110-gallon fuel tank (empty) is kept in an aluminum containment next to the shed.

1.2.3 West Bay 1 and 3

The West Bay installations were used to provide shelter for monitoring crews during data collection. West Bay 1 includes two temporary wood frame buildings (8' x 10') constructed on an elevated platform. West Bay 3 consists of one temporary wood frame building (8' x 10') and an attached generator shed, both placed on tundra pads. The West Bay 4 site contains similar structures, but because it is contained within the larger MSD area it is no longer identified as a separate field location.

West Bay 1 is located in the SW1/4 SW1/4 of Sec 23, T3S, R35W (ADL No. 524714) (Figure 7). West Bay 3 is located in the NE1/4 SW1/4 of Sec 33, T3S, R36W (ADL No. 642412) (Figure 4).

1.2.4 Meteorological and Communications

The Pebble 1 meteorological station is located in the SW1/4 NE1/4 of Sec 20, T3S, R35W (ADL No. 524829) (Figure 7). The small site consists of a temporary fiberglass structure (approximately 8 x 8 ft) and associated equipment.

The Kuktuli Mountain radio repeater is located in the NE1/4 SW1/4 of Sec 36, T3S, R35W (ADL No. 646608) (Figure 7). The small site consists of a temporary metal structure (approximately 8 x 8 ft) and associated equipment.

1.2.5 Acid Rock Drainage Test Location

The ARD test site was set up to evaluate real time weathering and acid generation potential in area rock. The site consists of 12 large plastic barrels filled half way with rock fragments. Barrels are racked on wood tundra pads. Each barrel is covered with a 40-mil HDPE tarp to prevent water intrusion. Barrels are also covered with a 3/8-inch aluminum plate to prevent wind and wildlife damage. Drainage tubes are also sealed to prevent leakage.

In 2017 PLP re-activated the ARD testing site, with full-scale testing to resume in 2018. ARD barrels will remain covered until spring 2018.

The ARD site is located in the SE 1/4 SE 1/4 of Section 22, T3S, R35W (ADL No. 524713) (Figure 7).

1.3 PERSONNEL AND ACCOMMODATIONS

All personnel will be lodged off-site in the towns of Iliamna or Newhalen; PLP does not maintain any personnel camps in the field. Work crews are ferried to individual work sites by helicopter.

Each work site is outfitted with an emergency shelter, medical tent, and other small, temporary structures for storage and employee safety. The emergency shelter is a WeatherPort tent (or similar) containing a portable heating system, survival gear, and extra food and water to support field crews if weather conditions limit helicopter operations. The medical tent is supplied with first aid and medical supplies, and is staffed by an emergency medical technician whenever drilling is active. A wooden outhouse with portable toilet is stationed at each work site. All solid waste is collected and shipped offsite to an approved waste disposal facility.

All temporary structures are either constructed on, or placed on, wooden tundra pads to keep them elevated off site vegetation and minimize any impacts. These structures are all portable and moved by helicopter.

1.4 FUEL

Fuel for all mechanical equipment will be supplied from commercial storage facilities in Iliamna. Prior to the start of each field season, PLP will stage up to 1,200 gallons of Jet A fuel at the Main Supply Depot (MSD) to support helicopter operations. Any remaining fuel will be transported back to Iliamna at the end of each field season.

Fuel for each drill site will be transported to the work site by helicopter. Fuel quantities stored at each site vary based on the drill type and expected drilling depth. Maximum fuel storage is typically limited to the amount required to support 24 hours of continuous operation, generally 600 gallons or less. Fuel tanks are removed when the activity is completed.

Prior to transport, fly tanks receive an external visual inspection for signs of damage, fatigue cracking or deformation. Fly tank caps and fittings are visually inspected and physically manipulated to verify integrity. Fire extinguishers and spill response kits are inspected and confirmed to be response ready.

All field fuel tanks are double-walled and stored in welded aluminum containments when in use. Each containment is sized to contain at least 110 percent of the fuel tank's maximum capacity. All PLP fuel tanks, regardless of use or location, are filled to no more than 80 percent of the tank's maximum capacity and stored at least 100 feet from the nearest naturally occurring surface water source. Emergency spill kits and scrubbers are kept at any active fuel storage location.

PLP's Spill Prevention, Control, and Countermeasures Plan (SPCC) will be updated prior to the start of the 2018 field season.

2. PLANNED ACTIVITIES

2.1 GEOTECHNICAL BOREHOLES

Up to 61 geotechnical boreholes will be drilled during the 2018 field season using sonic drilling methods. A sonic drill works by sending high-frequency resonant vibrations down a drill string to the drill bit. The frequency varies between 50 and 200 hertz depending on field conditions. Resonance magnifies the amplitude of the drill bit, which fluidizes the soil particles at the bit face. Drill mud is not required; air and water may be used but are not always necessary. Small quantities of water may be used to prepare grout mixtures for borehole closure. Generally, no cuttings are produced other than the core samples, which are removed from the field for analysis. Drill bits range from two to eight inches in diameter. Bore depths are

Pebble Project

estimated to range between 100 and 200 feet. Geotechnical holes will be sampled using a Split spoon or Shelby tube.

Equipment used for geotechnical drilling is listed in Appendix B. Planned geotechnical drilling sites are listed in Appendix D and shown on Figure 9 and Figure 10. Prior to drilling, each site will be surveyed and recorded. Final locations will be reported to ADNR. Any geotechnical sites retained for further investigation (packer testing, piezometer installation, etc.) will be reported to ADNR and capped as required.

2.2 DIAMOND CORE DRILLING

Up to 19 diamond core boreholes are planned for the 2018 field season at depths ranging from 200 feet (quarry sites) to 2000 feet (deposit exploration). Diamond-embedded drill bits are lubricated with water or approved drilling muds to prevent overheating and facilitate core extraction. Drill bits range in size from 2.5 to 5 inches in diameter. Core samples are removed from the field for analysis. Small volumes of rock (cuttings) are extracted along with water and drilling muds to the surface. Recycling tanks and sumps are used to settle any solids or suspended material out of the recirculated water. Any collected solids are buried in sumps below the surface.

Equipment used for diamond core drilling is listed in Appendix B. Planned diamond core drilling sites are listed in Appendix D and shown on Figure 9 and Figure 10. Prior to drilling, each site will be surveyed and recorded. Final locations will be reported to ADNR.

2.3 BOREHOLE CLOSURE

At completion, all boreholes will be plugged with bentonite or an equivalent slurry from bottom to top. If this method is impracticable, each borehole will meet ADNR minimum standards for borehole closure: bentonite plug for a minimum of 10 feet within the top 20 feet of the drill hole in competent material; if water is encountered in any borehole, a minimum of seven feet of bentonite or equivalent slurry will be placed above the static water level.

If artesian water is encountered, ADNR or ADEC staff will be contacted for hole plugging requirements. If possible, artesian waters will be held down hole using drill mud, or the interval making water will be sealed off. Where this is not possible, the flow will be collected in a sump and directed to uplands away from stream, lakes and wetlands.

Borehole 3127 produces small quantities of water at the surface. Multiple attempts to completely cut off water flow were made in 2017. The site will be re-drilled and grouted with an alternate rig configuration during the 2018 field season.

Material types and quantities used to plug boreholes will be recorded and reported to ADNR in the annual reclamation report.

2.4 DISTURBED ACREAGE (1 ACRE = 43,560 SQUARE FEET)

All previously disturbed areas have been fully reclaimed (“disturbed” is defined as the vegetative mat removed or destroyed). PLP policies require all potentially land-disturbing activities to limit any disturbance to the maximum extent practicable. Based on historic averages for the same activity type, PLP estimates the following disturbed acreage from planned activity in 2018:

0.21 acres	Geotechnical drilling sites (150 sq. ft. average)
0.15 acres	Diamond drilled core sites (350 sq. ft. average)
0.01 acres	Borehole 3127
0.37 acres	TOTAL

Pebble Project

All disturbed areas are reclaimed as soon as practicable after the activity ends. Actual disturbed acreage for each work site will be recorded and reported to ADNR in the annual reclamation report. Disturbed areas are monitored in subsequent field seasons to evaluate reclamation success and any need for additional enhancements.

3. ENVIRONMENTAL CONTROLS

3.1 SITE PREPARATION

Drill sites are surveyed and photographed prior to any land-disturbing activity. Areas with minimal or no vegetation are prioritized to site material and equipment. When necessary, vegetation is removed and preserved to be re-used in reclamation. All heavy equipment and bulk materials are placed on wooden tundra pads to minimize impacts to vegetation.

3.2 WATER MANAGEMENT AND FISH PROTECTION

Water required for exploration will be taken from permitted temporary water use locations (i.e., nearby streams, ponds and/or from previous bore holes) should they contain sufficient volume. One submersible borehole pump with the maximum pumping capacity of 25 GPM will be used at each drill rig location. Each pump is affixed with an 18-inch distribution sleeve which has been certified by ADF&G for use in water bodies containing Group A fish (fry stage whitefish) or larger. The screen maximum approach velocity is 0.1 feet per second and has an outer mesh covering of 1mm x 12mm, slotted.

PLP adheres to the Water Withdrawal Plan agreement between PLP and the State, dated July 2010, that provides for both pre- and post-water withdrawal notification to be given to ADNR.

Water used for lubrication or core extraction is recirculated using aluminum recycle tanks. Overflow water is routed to a multi-stage sump to promote solids settling and infiltration. Any excess water from the sumps will be pumped and dispersed across uplands away from all surface waters and wetlands. Water dispersal locations will be monitored and relocated as necessary.

Proposed temporary water sites are listed in Appendix C and shown on Figure 9 and Figure 10.

3.3 RECLAMATION

All debris will be collected and removed from the site. The disturbed surface will be recontoured and stabilized to prevent erosion and promote natural revegetation. Salvaged vegetation will be replaced where practical. If necessary, an approved seed mixture will be used to reseed the disturbed areas to encourage more rapid revegetation. Each disturbed area will be inspected in the subsequent field season to evaluate reclamation success and the need for any enhancements.

Total disturbed areas and total reclaimed areas for each site will be recorded and reported to ADNR in the annual reclamation report.

3.4 WILDLIFE

PLP has a long-standing commitment to environmental stewardship. All field activities are conducted under strict guidelines that seek to avoid any potential disturbances and mitigate any impacts that occur. PLP's general wildlife management practices include:

- Helicopter-only travel. All summer field work is conducted exclusively by helicopter, including transit between individual field locations. The lack of roads and surface vehicle use significantly decreases noise and other potential disturbances to wildlife.

Pebble Project

- Minimum flight elevation and distance. All helicopters are required to travel between work sites at a minimum elevation of 500 feet above ground level (unless safety conditions prohibit) to minimize noise disturbances. If caribou, bear, moose, are observed during flight, helicopters are directed to maintain a one-mile horizontal buffer where practicable.
- Avoidance. Prior to commencing any work, individual locations are inspected from the air at the cruising altitude. If the area is visibly free of subject wildlife (e.g., caribou, moose, bears, beaver, waterfowl, migratory birds, raptors) staff conduct a ground-level inspection to confirm the work site is clear for the intended activity. If subject wildlife are present, work is either postponed until the area is open, or cancelled.
- Limited duration. Work sites are mobilized and demobilized within the shortest practical timeframe to limit field presence. All work sites are reclaimed as necessary.

4. OTHER PERMITS

4.1 TEMPORARY WATER USE

Water required for exploration activities will be taken from permitted temporary water use locations. All proposed water use locations have been previously permitted as such by ADNR under Temporary Water Use permits and Fish Habitat permits as necessary. A list of proposed drill sites, temporary water use locations, and estimated daily withdrawal volumes is presented in Appendix C. Previously permitted streams and ponds are shown in Figure 9 and Figure 10. Final water withdrawal locations will be surveyed and reported to ADNR at least 30 days prior to the start of activity.

4.2 FISH HABITAT

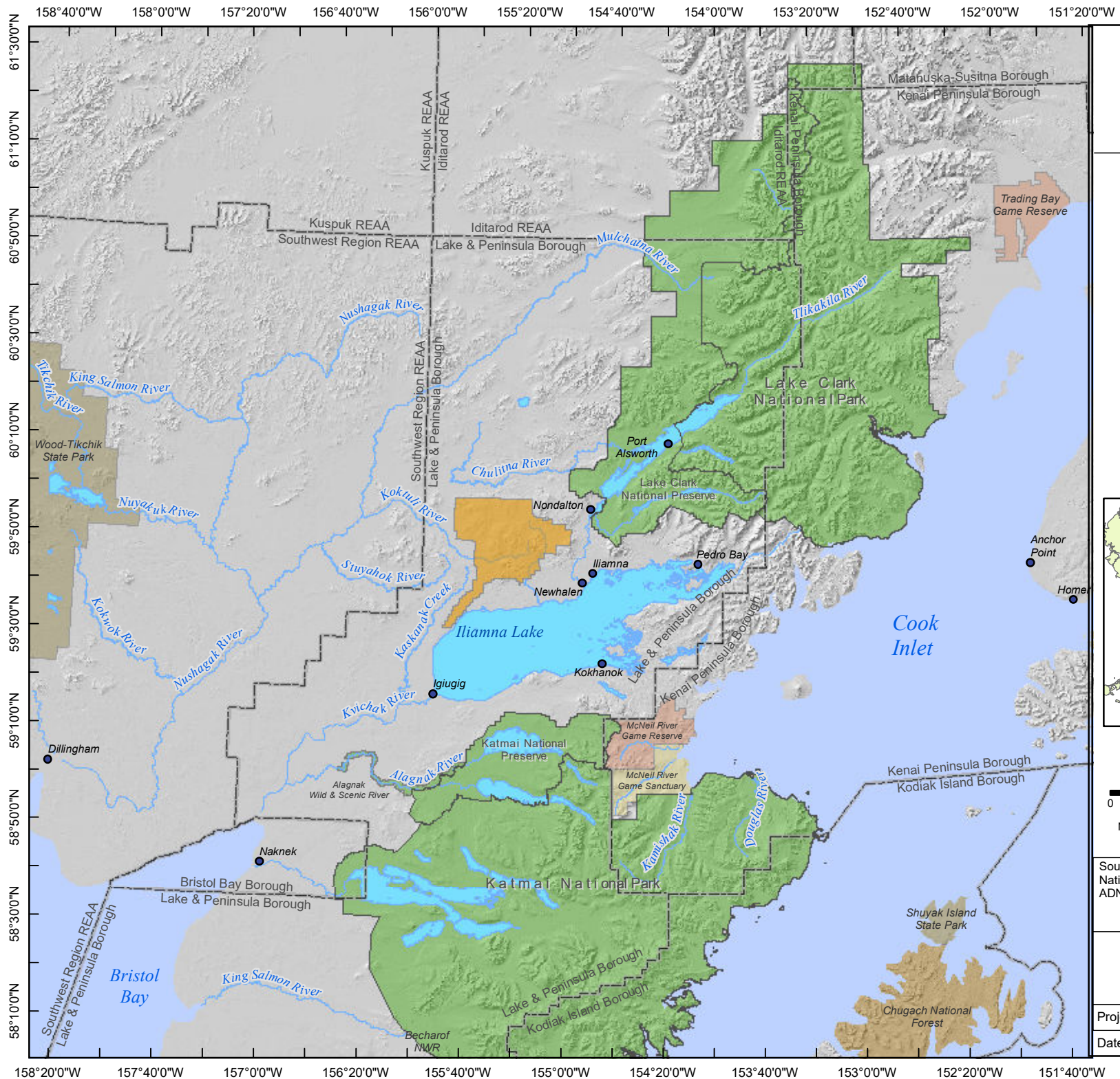
Fish Habitat permits will be required for water withdrawals from fish bearing streams. PLP will submit application materials to ADF&G and obtain all necessary permits prior to the start of any withdrawal activity.

4.3 CULTURAL SURVEYS

Cultural resource surveys have been completed for proposed work areas and are on file with the Office of History and Archaeology. If necessary, additional cultural surveys will be conducted prior to the start of any ground-disturbing activity.

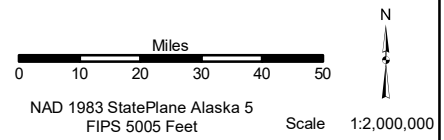
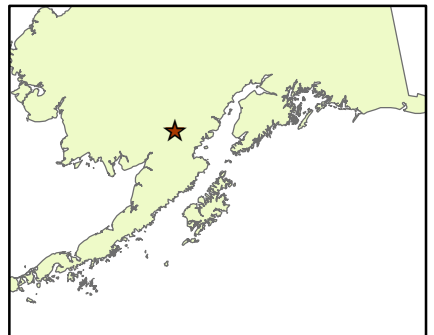
4.4 WETLANDS PERMIT

All drill sites are sited to avoid wetland areas where practicable. Any drilling activity occurring within wetlands falls under Nationwide General Permit for Survey Activities (NWP-6). This NWP does not require preconstruction notification to be made to the US Army Corps of Engineers (USACE), but PLP regularly communicates with USACE staff and informs them of planned activities.



Legend

-  Pebble Project Mineral Claims
-  National Forest Service
-  National Park Service
-  State Game Refuge
-  State Game Sanctuary
-  State Park



Source(s):
National Map, USGS
ADNR Mineral Claims, 2017

Figure
1

**Pebble Project
Vicinity Map**





Project: 2017 APMA

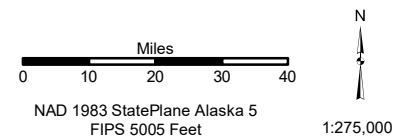
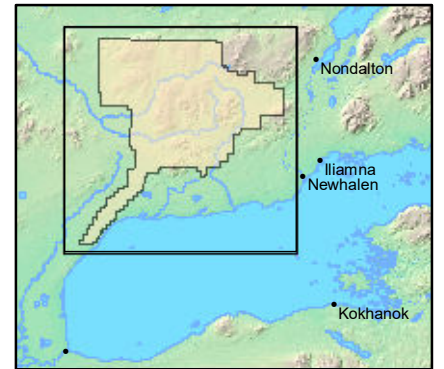
Date: 10/9/2017

Author: TH/PLP



Legend

-  Pebble East Claims Corp.
-  Pebble West Claims Corp.
-  U5 Resources Inc
-  Township



Source(s):
ADNR, Alaska Mining Claims,
10/2017

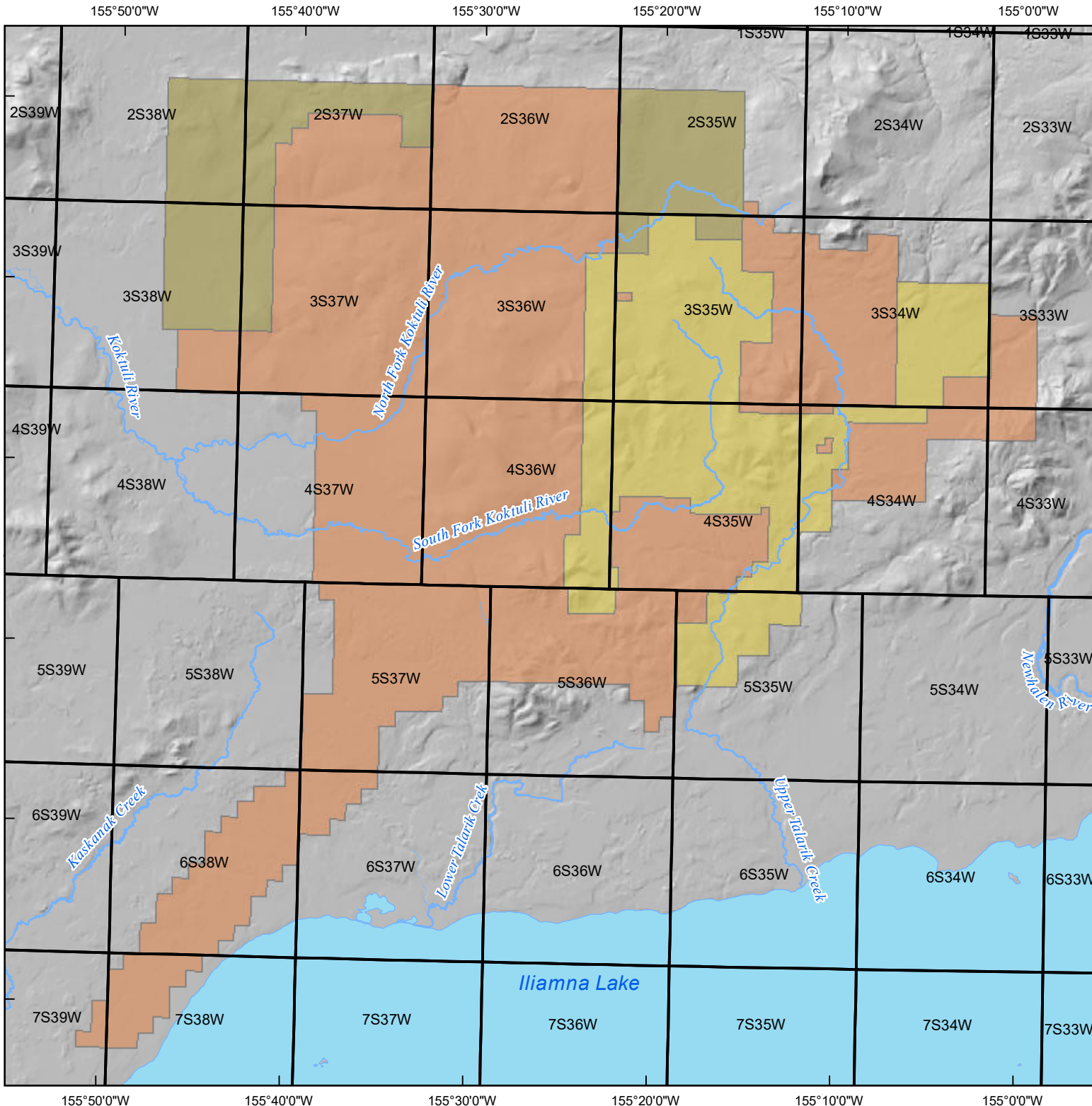
Figure 2

Mineral Claims: Overview

Project: 2017 APMA

Date: 10/9/2017

Author: TH/PLP



155°50'0"W

155°40'0"W

155°30'0"W

59°45'0"N

59°40'0"N

59°35'0"N

1

6

1

6

36

31

6

4S38W

4S37W

4S36W

5S39W

5S38W

5S37W

5S36W

Kashanuk Creek

36

31

36

31

36

31

1

6

6

1

6

6S39W

6S38W

6S37W

6S36W

Lower-Iliamna Creek

36

31

36

31

36

31

1

6

1

6

1

6

7S39W

7S38W

7S37W

7S36W




Iliamna Lake

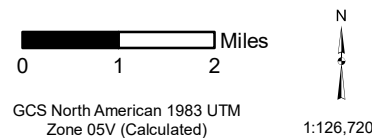
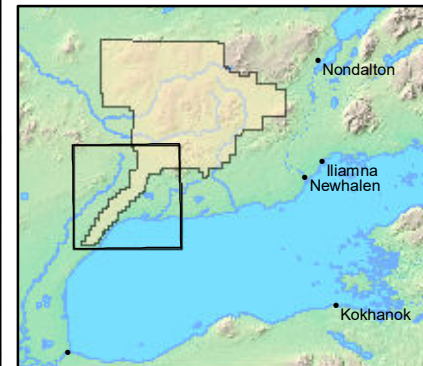
155°50'0"W

155°40'0"W

155°30'0"W



-  Pebble Mineral Claims
-  Township
-  Section



Source(s):
ADNR, Alaska Mining Claims,
10/2017

**Figure
3**

Mineral Claims: Southwest

Project: 2017 APMA

Date: 10/9/2017

Author: TH/PLP

155°50'0"W

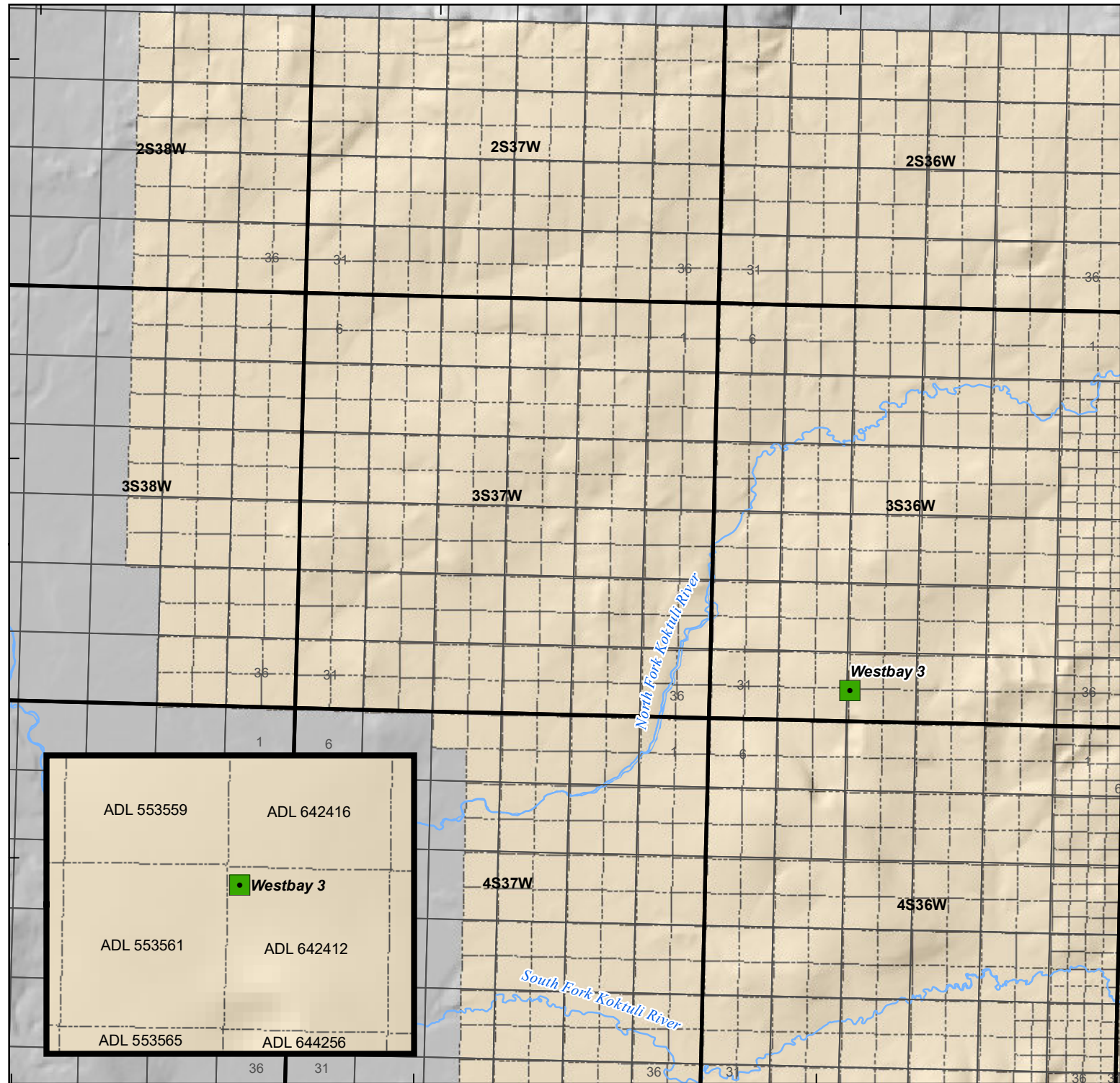
155°40'0"W





155°30'0"W

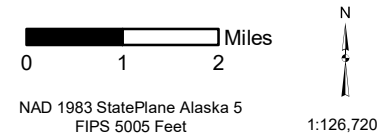
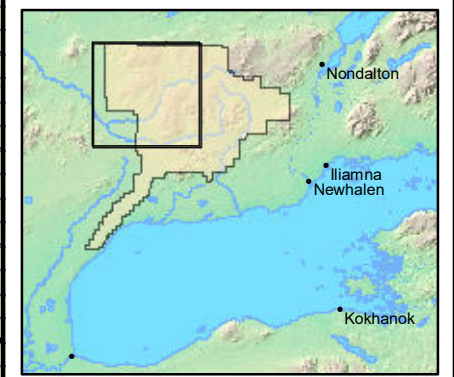
60°0'0"N

59°55'0"N

59°50'0"N



-  Pebble Project Mineral Claims
-  Secondary Storage
-  Township
-  Section



Source(s):
 ADNR, Alaska Mining Claims,
 10/2017

Figure
4

**Mineral Claims:
 Northwest**

Project: 2017 APMA

Date: 10/9/2017

Author: TH/PLP

155°50'0"W

155°40'0"W

155°30'0"W

Document Path: G:\GIS\AccGIS\1\MXDs\EN\W\RO\2017_APMA\4_PLP_Claims_NW_OCT2017.mxd

155°20'0"W

155°10'0"W

155°0'0"W

60°0'0"N

59°55'0"N







59°50'0"N

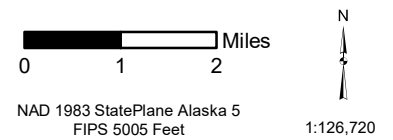
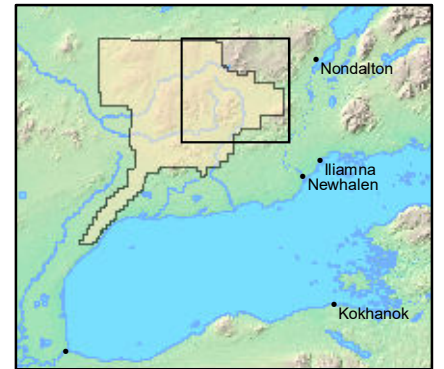
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155°10'0"W

155°0'0"W



-  Pebble Project Mineral Claims
-  Met/Communications
-  Main Supply Depot
-  Secondary Storage
-  Township
-  Section



Source(s):
ADNR, Alaska Mining Claims,
10/2017

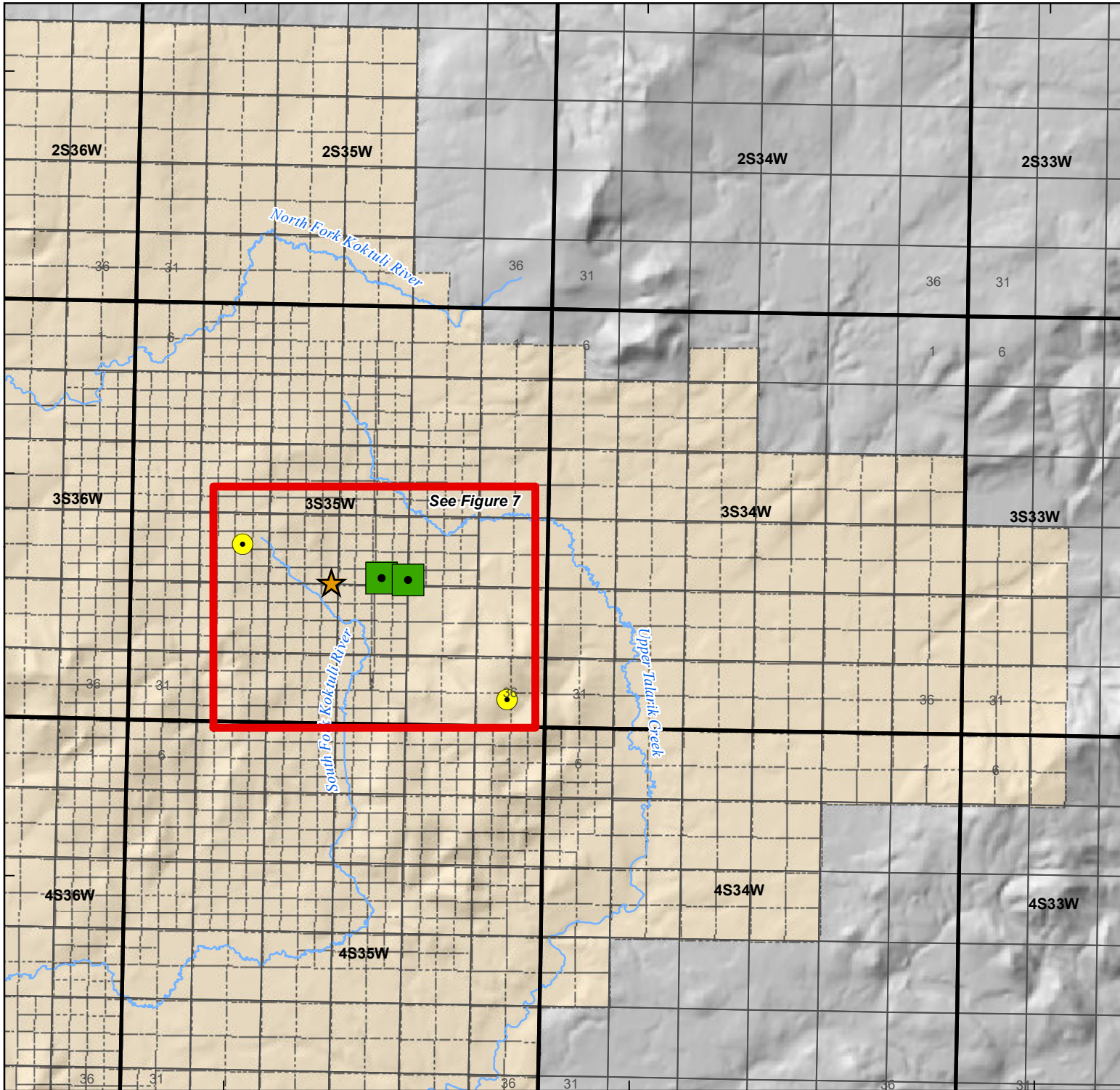
Figure
5

**Mineral Claims:
Northeast**

Project: 2017 APMA

Date: 12/8/2017

Author: TH/PLP



155°30'0"W

155°20'0"W

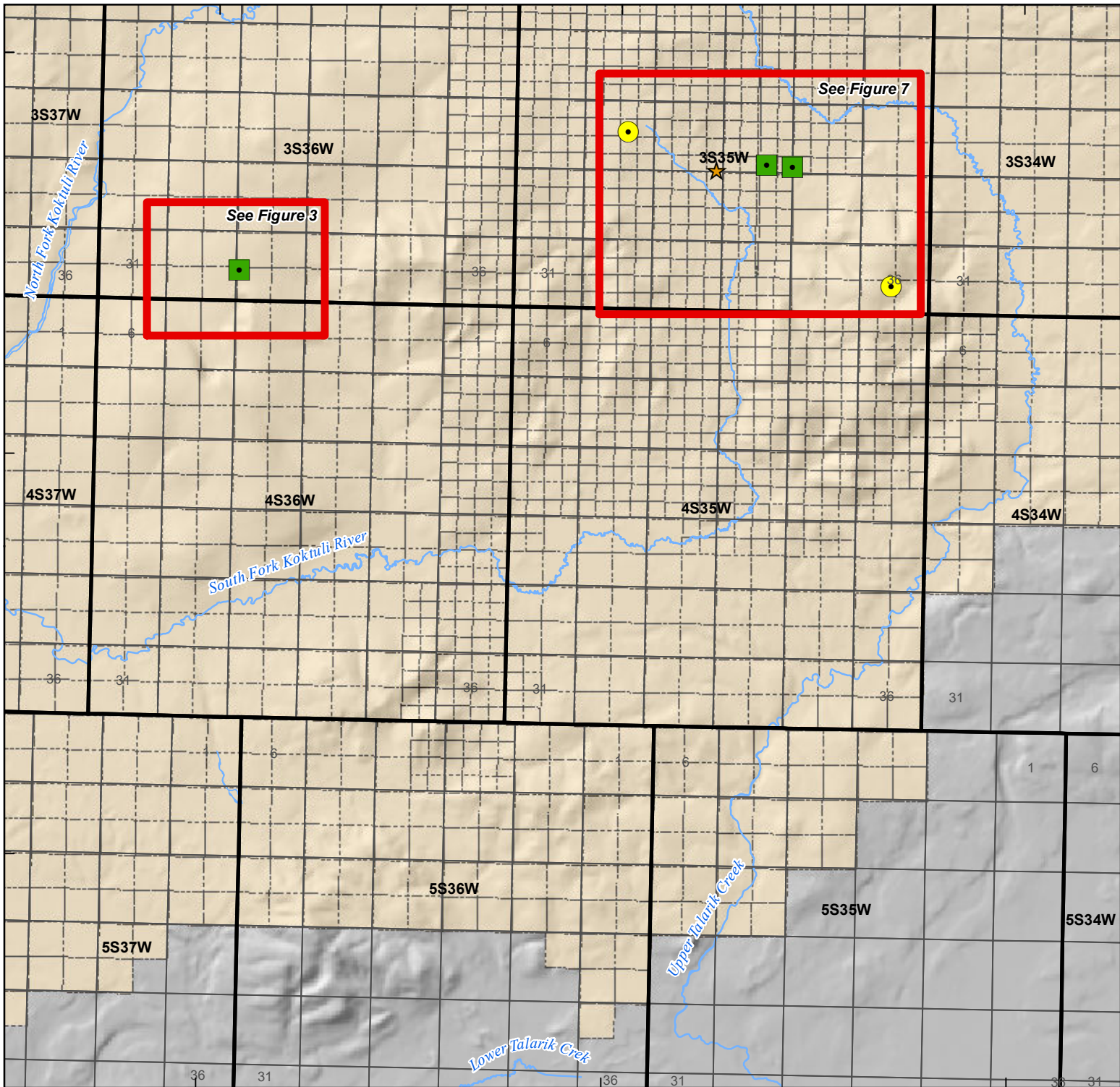
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59°55'0"N

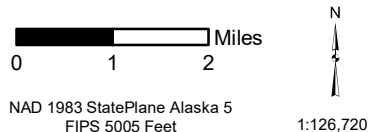
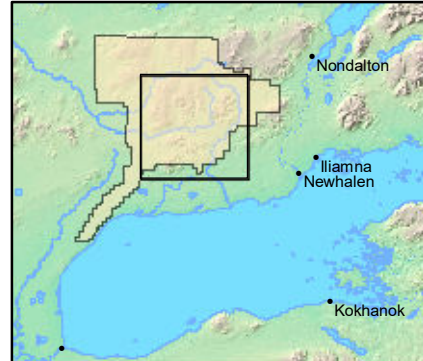
59°50'0"N

59°45'0"N

59°45'0"N



-  Pebble Project Mineral Claims
-  Met/Communications
-  Main Supply Depot
-  Secondary Storage
-  Township
-  Section



Source(s):
ADNR, Alaska Mining Claims,
10/2017

Figure
6

**Mineral Claims:
Southeast**

Project: 2016 APMA

Date: 12/8/2017

Author: TH/PLP

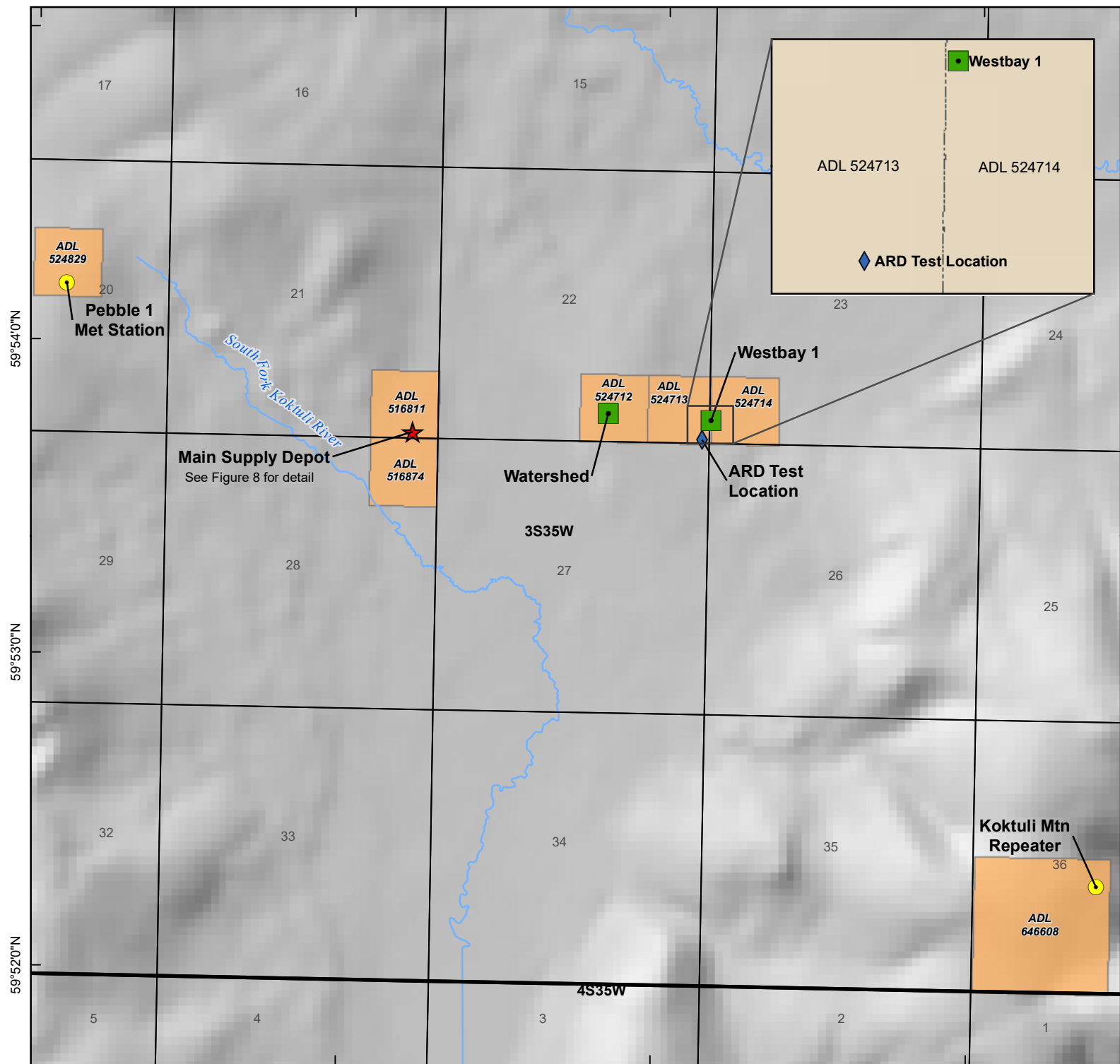
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155°20'0"W

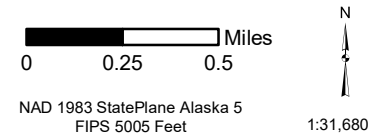
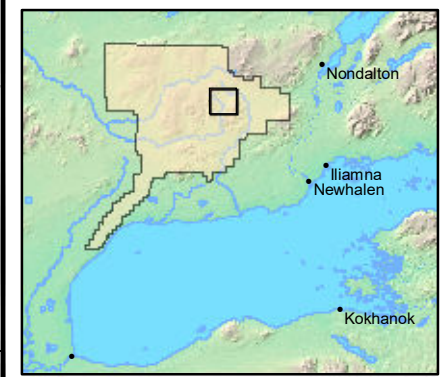
155°10'0"W

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155°20'0"W 155°18'0"W 155°16'0"W 155°14'0"W



- Claims with Surface Facilities
- Main Supply Depot
- Met/Communications
- Secondary Storage
- ARD Test Location
- Township
- Section



Source(s):
ADNR, Alaska Mining Claims,
10/2016

Figure
7

**Field Installations:
Deposit Area**

Project: 2016 APMA

Date: 12/8/2017







Author: TH/PLP

59°54'0"N
59°53'0"N
59°52'0"N

155°18'0"W 155°16'0"W 155°14'0"W



Legend

-  Geotechnical Borehole
-  Diamond Borehole
-  Quarry Borehole
-  Previously Permitted Streams
-  Previously Permitted Ponds
-  ADL Claim Boundary

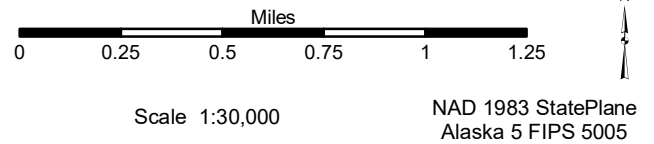


Figure:
10

2018 Planned Drill Sites-West

File: 10 2018 Preliminary Drill Program West	Date: 12/8/2017
Revision:	Author: TH/PLP

155°20'0"W







59°55'0"N

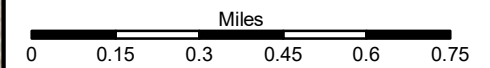


155°20'0"W



Legend

-  Geotechnical Borehole
-  Diamond Borehole
-  Quarry Borehole
-  Previously Permitted Streams
-  Previously Permitted Ponds
-  ADL Claim Boundary



Scale 1:21,792

NAD 1983 StatePlane
Alaska 5 FIPS 5005

Figure:
9

2018 Planned Drill Sites-East

File: 9 2018 Preliminary Drill Program East

Date: 12/8/2017

Revision:

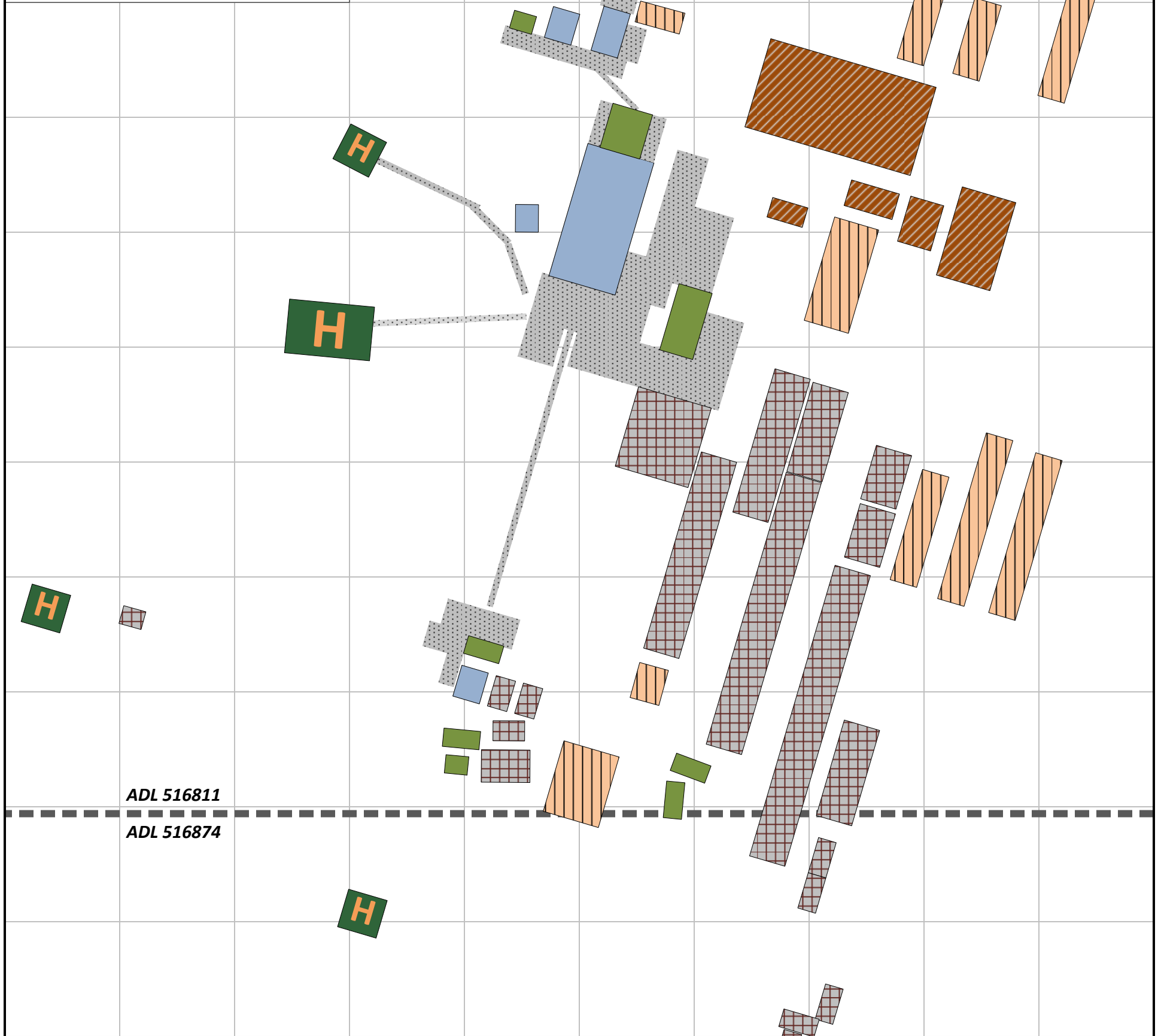
Author: TH/PLP

Figure 8

MAIN SUPPLY DEPOT

T3SR35W Secs. 21 & 28

General Layout—Sept. 2016





Temporary Structures

 Platform Tent

 Woodframe Building

 Drill Shed


 Helipad (wood)


 Platforms & Boardwalks

 Claim Boundary

Laydown Areas (elevated)

 Drill Rods

 Lumber & Dunnage

 General Storage



Scale: 1" = 50'
(printed at 11" x 17")

Some measurements approximate

Appendix A

Mineral Properties List (APMA Block 13)

Mineral Claims

Pebble East Claims Corp.
3201 C Street, Suite 602
Anchorage, AK 99503

ADL No.	Claim Name	MTRS	Total Acres
ADL 552871	SOUTH PEBBLE 113	S005S036W08	160
ADL 552872	SOUTH PEBBLE 114	S005S036W08	160
ADL 552873	SOUTH PEBBLE 115	S005S036W09	160
ADL 552874	SOUTH PEBBLE 116	S005S036W16	160
ADL 552875	SOUTH PEBBLE 117	S005S036W16	160
ADL 552876	SOUTH PEBBLE 118	S005S036W17	160
ADL 552877	SOUTH PEBBLE 119	S005S036W17	160
ADL 552878	SOUTH PEBBLE 120	S005S036W18	160
ADL 552879	SOUTH PEBBLE 121	S005S036W18	160
ADL 552880	SOUTH PEBBLE 122	S005S036W18	160
ADL 552881	SOUTH PEBBLE 123	S005S036W18	160
ADL 552882	SOUTH PEBBLE 124	S005S036W17	160
ADL 552883	SOUTH PEBBLE 125	S005S036W17	160
ADL 552884	SOUTH PEBBLE 126	S005S036W16	160
ADL 552885	SOUTH PEBBLE 127	S005S036W16	160
ADL 552909	SOUTH PEBBLE 151	S005S036W25	160
ADL 552911	SOUTH PEBBLE 153	S005S036W24	160
ADL 552912	SOUTH PEBBLE 154	S005S036W24	160
ADL 552913	SOUTH PEBBLE 155	S005S036W24	160
ADL 552914	SOUTH PEBBLE 156	S005S036W24	160
ADL 552915	SOUTH PEBBLE 157	S005S036W13	160
ADL 552916	SOUTH PEBBLE 158	S005S036W13	160
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ADL 552936	KAK 6	S004S037W11	160
ADL 552937	KAK 7	S004S037W12	160
ADL 552938	KAK 8	S004S037W12	160
ADL 552939	KAK 9	S004S037W01	160
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ADL 552947	KAK 17	S004S037W02	160
ADL 552948	KAK 18	S004S037W02	160
ADL 552949	KAK 19	S004S037W01	160
ADL 552950	KAK 20	S004S037W01	160
ADL 552951	KAK 21	S003S036W31	160
ADL 552952	KAK 22	S003S036W31	160
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ADL 552955	KAK 25	S003S037W35	160
ADL 552956	KAK 26	S003S037W35	160
ADL 552957	KAK 27	S003S037W34	160

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ADL 552960	KAK 30	S003S037W34	160
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ADL 552963	KAK 33	S003S037W36	160
ADL 552964	KAK 34	S003S037W36	160
ADL 552965	KAK 35	S003S036W31	160
ADL 552966	KAK 36	S003S036W31	160
ADL 552967	KAK 37	S003S036W30	160
ADL 552968	KAK 38	S003S036W30	160
ADL 552969	KAK 39	S003S037W25	160
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ADL 552973	KAK 43	S003S037W27	160
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ADL 553005	KAK 75	S003S036W09	160
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ADL 553009	KAK 79	S003S036W07	160
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ADL 553011	KAK 81	S003S037W12	160

ADL No.	Claim Name	MTRS	Total Acres
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ADL 553429	PEBA 3	S003S033W20	160
ADL 553437	PEBA 11	S003S033W19	160
ADL 553438	PEBA 12	S003S033W19	160
ADL 553439	PEBA 13	S003S033W20	160
ADL 553447	PEBA 21	S003S033W30	160
ADL 553448	PEBA 22	S003S033W30	160
ADL 553449	PEBA 23	S003S033W29	160
ADL 553457	PEBA 31	S003S033W30	160
ADL 553458	PEBA 32	S003S033W30	160
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ADL 553527	PEBA 101	S004S034W17	160
ADL 553528	PEBA 102	S004S034W17	160
ADL 553529	PEBA 103	S004S034W16	160
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ADL 553538	PEBA 112	S004S034W15	160
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ADL No.	Claim Name	MTRS	Total Acres
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ADL 553577	PEBB 39	S004S036W08	160
ADL 553578	PEBE 1	S002S037W25	160
ADL 553579	PEBE 2	S002S037W25	160
ADL 553580	PEBE 3	S002S037W26	160
ADL 553581	PEBE 4	S002S037W25	160
ADL 553582	PEBE 5	S002S037W25	160
ADL 553583	PEBE 6	S002S037W35	160
ADL 553584	PEBE 7	S002S037W36	160
ADL 553585	PEBE 8	S002S037W36	160
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ADL 553616	SILL 6156	S004S034W07	40
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ADL 638780	PEB 2	S004S036W22	160
ADL 638781	PEB 3	S004S036W23	160
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ADL 638791	PEB 13	S004S037W25	160
ADL 638792	PEB 14	S004S036W30	160
ADL 638793	PEB 15	S004S036W30	160

ADL No.	Claim Name	MTRS	Total Acres
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ADL 638795	PEB 17	S004S036W29	160
ADL 638796	PEB 18	S004S036W28	160
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ADL 638799	PEB 21	S004S036W27	160
ADL 638800	PEB 22	S004S036W26	160
ADL 638801	PEB 23	S004S036W26	40
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ADL 638807	PEB 29	S004S037W25	160
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ADL 638863	PEB 85	S005S037W03	160
ADL 638864	PEB 86	S005S037W02	160
ADL 638865	PEB 87	S005S037W02	160

ADL No.	Claim Name	MTRS	Total Acres
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ADL 638868	PEB 90	S005S036W06	160
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ADL 638871	PEB 93	S005S036W05	160
ADL 638872	PEB 94	S005S036W04	160
ADL 638873	PEB 95	S005S036W04	40
ADL 638874	PEB 96	S005S036W04	40
ADL 638875	PEB 97	S005S036W03	40
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ADL 638883	PEB 105	S005S037W10	160
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ADL 640065	PEB N-5	S004S036W20	160
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ADL 640067	PEB N-7	S004S036W21	160
ADL 640068	PEB N-8	S004S037W24	160
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ADL 640081	PEB N-21	S004S036W16	160
ADL 640082	PEB N-22	S004S036W15	160
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ADL 640084	PEB N-24	S004S036W14	160
ADL 640085	PEB N-25	S004S036W14	160
ADL 640086	PEB N-26	S004S037W13	160
ADL 640087	PEB N-27	S004S036W18	160
ADL 640088	PEB N-28	S004S036W18	160
ADL 640089	PEB N-29	S004S036W17	160
ADL 640090	PEB N-30	S004S036W17	160
ADL 640091	PEB N-31	S004S036W16	160
ADL 640092	PEB N-32	S004S036W16	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 640093	PEB N-33	S004S036W15	160
ADL 640094	PEB N-34	S004S036W15	160
ADL 640095	PEB N-35	S004S036W14	160
ADL 640096	PEB N-36	S004S036W14	160
ADL 642027	SOUTH PEBBLE 71	S005S037W23	160
ADL 642028	SOUTH PEBBLE 72	S005S037W23	160
ADL 642029	SOUTH PEBBLE 73	S005S037W23	160
ADL 642035	SOUTH PEBBLE 79	S005S036W23	160
ADL 642036	SOUTH PEBBLE 80	S005S036W14	160
ADL 642037	SOUTH PEBBLE 81	S005S036W14	160
ADL 642038	SOUTH PEBBLE 82	S005S036W15	160
ADL 642039	SOUTH PEBBLE 83	S005S036W15	160
ADL 642040	SOUTH PEBBLE 84	S005S037W13	160
ADL 642041	SOUTH PEBBLE 85	S005S037W13	160
ADL 642042	SOUTH PEBBLE 86	S005S037W14	160
ADL 642043	SOUTH PEBBLE 87	S005S037W14	160
ADL 642044	SOUTH PEBBLE 88	S005S037W15	160
ADL 642045	SOUTH PEBBLE 89	S005S037W15	160
ADL 642046	SOUTH PEBBLE 90	S005S037W15	160
ADL 642047	SOUTH PEBBLE 91	S005S037W15	160
ADL 642048	SOUTH PEBBLE 92	S005S037W14	160
ADL 642049	SOUTH PEBBLE 93	S005S037W14	160
ADL 642050	SOUTH PEBBLE 94	S005S037W13	160
ADL 642051	SOUTH PEBBLE 95	S005S037W13	160
ADL 642052	SOUTH PEBBLE 96	S005S036W15	160
ADL 642053	SOUTH PEBBLE 97	S005S036W15	160
ADL 642054	SOUTH PEBBLE 98	S005S036W14	160
ADL 642055	SOUTH PEBBLE 99	S005S036W14	160
ADL 642056	SOUTH PEBBLE 100	S005S036W11	160
ADL 642057	SOUTH PEBBLE 101	S005S036W11	160
ADL 642058	SOUTH PEBBLE 102	S005S036W10	160
ADL 642059	SOUTH PEBBLE 103	S005S036W10	160
ADL 642060	SOUTH PEBBLE 104	S005S036W09	160
ADL 642061	SOUTH PEBBLE 105	S005S036W07	160
ADL 642062	SOUTH PEBBLE 106	S005S036W07	160
ADL 642063	SOUTH PEBBLE 107	S005S037W12	160
ADL 642064	SOUTH PEBBLE 108	S005S037W12	160
ADL 642065	SOUTH PEBBLE 109	S005S037W11	160
ADL 642066	SOUTH PEBBLE 110	S005S037W11	160
ADL 642067	SOUTH PEBBLE 111	S005S037W10	160
ADL 642068	SOUTH PEBBLE 112	S005S037W10	160
ADL 642334	PEB EBA 1	S004S035W02	40
ADL 642335	PEB EBA 2	S004S035W02	40
ADL 642336	PEB EBA 3	S004S035W02	40
ADL 642337	PEB EBA 4	S004S035W02	40
ADL 642338	PEB EB 1	S003S035W35	160
ADL 642339	PEB EB 2	S003S035W35	160
ADL 642340	PEB EB 3	S003S035W35	160
ADL 642341	PEB EB 4	S003S035W35	160
ADL 642342	PEB EB 5	S003S034W31	160
ADL 642343	PEB EB 6	S003S034W31	160
ADL 642344	PEB EB 7	S003S034W32	160
ADL 642345	PEB EB 8	S003S034W32	160
ADL 642346	PEB EB 9	S003S034W33	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 642347	PEB EB 10	S003S034W33	160
ADL 642348	PEB EB 11	S003S034W31	160
ADL 642349	PEB EB 12	S003S034W31	160
ADL 642350	PEB EB 13	S003S034W32	160
ADL 642351	PEB EB 14	S003S034W32	160
ADL 642352	PEB EB 15	S003S034W33	160
ADL 642353	PEB EB 16	S003S034W33	160
ADL 642354	PEB EB 17	S003S035W26	160
ADL 642355	PEB EB 18	S003S035W26	160
ADL 642356	PEB EB 19	S003S035W25	160
ADL 642357	PEB EB 20	S003S035W25	160
ADL 642358	PEB EB 21	S003S034W30	160
ADL 642359	PEB EB 22	S003S034W30	160
ADL 642360	PEB EB 23	S003S034W29	160
ADL 642361	PEB EB 24	S003S034W29	160
ADL 642362	PEB EB 25	S003S034W28	160
ADL 642363	PEB EB 26	S003S034W28	160
ADL 642364	PEB EB 27	S003S035W26	160
ADL 642365	PEB EB 28	S003S035W26	160
ADL 642366	PEB EB 29	S003S035W25	160
ADL 642367	PEB EB 30	S003S035W25	160
ADL 642368	PEB EB 31	S003S034W30	160
ADL 642369	PEB EB 32	S003S034W30	160
ADL 642370	PEB EB 33	S003S034W29	160
ADL 642371	PEB EB 34	S003S034W29	160
ADL 642372	PEB EB 35	S003S034W28	160
ADL 642373	PEB EB 36	S003S034W28	160
ADL 642374	PEB EB 37	S003S035W24	160
ADL 642375	PEB EB 38	S003S035W24	160
ADL 642376	PEB EB 39	S003S034W19	160
ADL 642377	PEB EB 40	S003S034W19	160
ADL 642378	PEB EB 41	S003S034W20	160
ADL 642379	PEB EB 42	S003S034W20	160
ADL 642380	PEB EB 43	S003S034W21	160
ADL 642381	PEB EB 44	S003S034W21	160
ADL 642382	PEB EB 45	S003S035W24	160
ADL 642383	PEB EB 46	S003S035W24	160
ADL 642384	PEB EB 47	S003S034W19	160
ADL 642385	PEB EB 48	S003S034W19	160
ADL 642386	PEB EB 49	S003S034W20	160
ADL 642387	PEB EB 50	S003S034W20	160
ADL 642388	PEB EB 51	S003S034W21	160
ADL 642389	PEB EB 52	S003S034W21	160
ADL 642390	PEB EB 53	S003S035W13	160
ADL 642391	PEB EB 54	S003S035W13	160
ADL 642392	PEB EB 55	S003S034W18	160
ADL 642393	PEB EB 56	S003S034W18	160
ADL 642394	PEB EB 57	S003S034W17	160
ADL 642395	PEB EB 58	S003S034W17	160
ADL 642396	PEB EB 59	S003S034W16	160
ADL 642397	PEB EB 60	S003S034W16	160
ADL 642398	PEB EB 61	S003S035W13	160
ADL 642399	PEB EB 62	S003S035W13	160
ADL 642400	PEB EB 63	S003S034W18	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 642401	PEB EB 64	S003S034W18	160
ADL 642402	PEB EB 65	S003S034W17	160
ADL 642403	PEB EB 66	S003S034W17	160
ADL 642404	PEB EB 67	S003S034W16	160
ADL 642405	PEB EB 68	S003S034W16	160
ADL 642406	PEB EB 69	S003S035W12	160
ADL 642407	PEB EB 70	S003S035W12	160
ADL 642408	PEB EB 71	S003S034W07	160
ADL 642409	PEB EB 72	S003S034W07	160
ADL 642410	PEB EB 73	S003S034W08	160
ADL 642411	PEB EB 74	S003S034W08	160
ADL 642412	PEB WB 1	S003S036W33	160
ADL 642413	PEB WB 2	S003S036W33	160
ADL 642414	PEB WB 3	S003S036W34	160
ADL 642415	PEB WB 4	S003S036W34	160
ADL 642416	PEB WB 5	S003S036W33	160
ADL 642417	PEB WB 6	S003S036W33	160
ADL 642418	PEB WB 7	S003S036W34	160
ADL 642419	PEB WB 8	S003S036W34	160
ADL 642420	PEB WB 9	S003S036W28	160
ADL 642421	PEB WB 10	S003S036W28	160
ADL 642422	PEB WB 11	S003S036W27	160
ADL 642423	PEB WB 12	S003S036W27	160
ADL 642424	PEB WB 13	S003S036W26	160
ADL 642425	PEB WB 14	S003S036W26	160
ADL 642426	PEB WB 15	S003S036W28	160
ADL 642427	PEB WB 16	S003S036W28	160
ADL 642428	PEB WB 17	S003S036W27	160
ADL 642429	PEB WB 18	S003S036W27	160
ADL 642430	PEB WB 19	S003S036W26	160
ADL 642431	PEB WB 20	S003S036W26	160
ADL 642432	PEB WB 21	S003S036W21	160
ADL 642433	PEB WB 22	S003S036W22	160
ADL 642434	PEB WB 23	S003S036W22	160
ADL 642435	PEB WB 24	S003S036W23	160
ADL 642436	PEB WB 25	S003S036W23	160
ADL 642437	PEB WB 26	S003S036W22	160
ADL 642438	PEB WB 27	S003S036W22	160
ADL 642439	PEB WB 28	S003S036W23	160
ADL 642440	PEB WB 29	S003S036W23	160
ADL 642441	PEB WB 30	S003S036W15	160
ADL 642442	PEB WB 31	S003S036W15	160
ADL 642443	PEB WB 32	S003S036W14	160
ADL 642444	PEB WB 33	S003S036W14	160
ADL 642445	PEB WB 34	S003S036W14	160
ADL 642446	PEB WB 35	S003S036W14	160
ADL 642447	PEB WB 36	S003S036W11	160
ADL 642448	PEB WB 37	S003S036W11	160
ADL 642449	PEB WB 38	S003S036W11	160
ADL 642450	PEB WB 39	S003S036W11	160
ADL 643892	PEB SE A1	S004S035W31	40
ADL 643893	PEB SE A2	S004S035W31	40
ADL 643894	PEB SE A3	S004S035W31	40
ADL 643895	PEB SE A4	S004S035W31	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 643896	PEB SE A5	S004S035W31	40
ADL 643897	PEB SE A6	S004S035W19	40
ADL 643898	PEB SE A7	S004S035W19	40
ADL 643899	PEB SE 1	S004S035W31	160
ADL 643900	PEB SE 2	S004S035W32	160
ADL 643901	PEB SE 3	S004S035W32	160
ADL 643902	PEB SE 4	S004S035W31	160
ADL 643903	PEB SE 5	S004S035W32	160
ADL 643904	PEB SE 6	S004S035W32	160
ADL 643905	PEB SE 7	S004S035W30	160
ADL 643906	PEB SE 8	S004S035W30	160
ADL 643907	PEB SE 9	S004S035W29	160
ADL 643908	PEB SE 10	S004S035W29	160
ADL 643909	PEB SE 11	S004S035W28	160
ADL 643910	PEB SE 12	S004S035W28	160
ADL 643911	PEB SE 13	S004S035W30	160
ADL 643912	PEB SE 14	S004S035W30	160
ADL 643913	PEB SE 15	S004S035W29	160
ADL 643914	PEB SE 16	S004S035W29	160
ADL 643915	PEB SE 17	S004S035W28	160
ADL 643916	PEB SE 18	S004S035W28	160
ADL 643917	PEB SE 19	S004S035W19	160
ADL 643918	PEB SE 20	S004S035W19	160
ADL 643919	PEB SE 21	S004S035W20	160
ADL 643920	PEB SE 22	S004S035W20	160
ADL 643921	PEB SE 23	S004S035W21	160
ADL 643922	PEB SE 24	S004S035W21	160
ADL 643923	PEB SE 25	S004S035W19	160
ADL 643924	PEB SE 26	S004S035W20	160
ADL 643925	PEB SE 27	S004S035W20	160
ADL 643926	PEB SE 28	S004S035W21	160
ADL 643927	PEB SE 29	S004S035W33	160
ADL 643928	PEB SE 30	S004S035W33	160
ADL 643929	PEB SE 31	S004S035W33	160
ADL 643930	PEB SE 32	S004S035W33	160
ADL 643931	PEB NW A1	S003S036W12	40
ADL 643932	PEB NW A2	S003S036W12	40
ADL 643933	PEB NW A3	S003S036W12	40
ADL 643934	PEB NW A4	S003S036W12	40
ADL 643935	PEB NW 1	S003S036W02	160
ADL 643936	PEB NW 2	S003S036W02	160
ADL 643937	PEB NW 3	S003S036W01	160
ADL 643938	PEB NW 4	S003S036W01	160
ADL 643939	PEB NW 5	S003S036W02	160
ADL 643940	PEB NW 6	S003S036W02	160
ADL 643941	PEB NW 7	S003S036W01	160
ADL 643942	PEB NW 8	S003S036W01	160
ADL 643943	PEB NW 9	S002S036W35	160
ADL 643944	PEB NW 10	S002S036W35	160
ADL 643945	PEB NW 11	S002S036W36	160
ADL 643946	PEB NW 12	S002S036W36	160
ADL 643947	PEB NW 13	S002S036W35	160
ADL 643948	PEB NW 14	S002S036W35	160
ADL 643949	PEB NW 15	S002S036W36	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 643950	PEB NW 16	S002S036W36	160
ADL 643951	PEB NW 17	S002S036W26	160
ADL 643952	PEB NW 18	S002S036W26	160
ADL 643953	PEB NW 19	S002S036W25	160
ADL 643954	PEB NW 20	S002S036W25	160
ADL 643955	PEB NW 21	S002S036W26	160
ADL 643956	PEB NW 22	S002S036W26	160
ADL 643957	PEB NW 23	S002S036W25	160
ADL 643958	PEB NW 24	S002S036W25	160
ADL 643959	PEB NW 25	S002S036W23	160
ADL 643960	PEB NW 26	S002S036W23	160
ADL 643961	PEB NW 27	S002S036W24	160
ADL 643962	PEB NW 28	S002S036W24	160
ADL 643963	PEB NW 29	S002S036W23	160
ADL 643964	PEB NW 30	S002S036W23	160
ADL 643965	PEB NW 31	S002S036W24	160
ADL 643966	PEB NW 32	S002S036W24	160
ADL 644196	PEB SE 33	S004S035W22	160
ADL 644197	PEB SE 34	S004S035W22	160
ADL 644198	PEB SE 35	S004S035W23	160
ADL 644199	PEB SE 36	S004S035W23	160
ADL 644200	PEB SE 37	S004S035W27	160
ADL 644201	PEB SE 38	S004S035W27	160
ADL 644202	PEB SE 39	S004S035W26	160
ADL 644203	PEB SE 40	S004S035W26	160
ADL 644204	PEB SE 41	S004S035W27	160
ADL 644205	PEB SE 42	S004S035W27	160
ADL 644206	PEB SE 43	S004S035W26	160
ADL 644207	PEB SE 44	S004S035W26	160
ADL 644208	PEB SE 45	S004S035W34	160
ADL 644209	PEB SE 46	S004S035W34	160
ADL 644210	PEB SE 47	S004S035W35	160
ADL 644211	PEB SE 48	S004S035W34	160
ADL 644212	PEB SE 49	S004S035W34	160
ADL 644213	PEB SE 50	S005S036W02	160
ADL 644214	PEB SE 51	S005S036W02	160
ADL 644215	PEB SE 52	S005S036W01	160
ADL 644216	PEB SE 53	S005S036W01	160
ADL 644217	PEB SE 54	S005S035W06	160
ADL 644218	PEB SE 55	S005S035W06	160
ADL 644219	PEB SE 56	S005S036W02	160
ADL 644220	PEB SE 57	S005S036W02	160
ADL 644221	PEB SE 58	S005S036W01	160
ADL 644222	PEB SE 59	S005S036W01	160
ADL 644223	PEB SE 60	S005S035W06	160
ADL 644224	PEB SE 61	S005S035W06	160
ADL 644225	PEB SE A8	S004S035W23	40
ADL 644226	PEB SE A9	S005S036W04	40
ADL 644227	PEB SE A10	S005S036W03	40
ADL 644228	PEB SE A11	S005S036W03	40
ADL 644229	PEB SE A12	S005S036W03	40
ADL 644230	PEB SE A13	S005S036W03	40
ADL 644231	PEB EB 75	S003S034W09	160
ADL 644232	PEB EB 76	S003S034W09	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 644233	PEB EB 77	S003S035W11	160
ADL 644234	PEB EB 78	S003S035W11	160
ADL 644235	PEB EB 79	S003S035W12	160
ADL 644236	PEB EB 80	S003S035W12	160
ADL 644237	PEB EB 81	S003S034W07	160
ADL 644238	PEB EB 82	S003S034W07	160
ADL 644239	PEB EB 83	S003S034W08	160
ADL 644240	PEB EB 84	S003S034W08	160
ADL 644241	PEB EB 85	S003S034W09	160
ADL 644242	PEB EB 86	S003S034W09	160
ADL 644243	PEB EB 87	S003S035W02	160
ADL 644244	PEB EB 88	S003S035W02	160
ADL 644245	PEB EB 89	S003S035W01	160
ADL 644246	PEB EB 90	S003S035W01	160
ADL 644247	PEB EB 91	S003S034W06	160
ADL 644248	PEB EB 92	S003S034W04	160
ADL 644249	PEB EB 93	S003S034W04	160
ADL 644250	PEB EB 94	S003S035W02	160
ADL 644251	PEB EB 95	S003S035W02	160
ADL 644252	PEB EB A5	S003S035W11	40
ADL 644253	PEB EB A6	S003S035W11	40
ADL 644254	PEB EB A7	S003S035W11	40
ADL 644255	PEB EB A8	S003S035W11	40
ADL 644256	PEB WB 40	S004S036W04	160
ADL 644257	PEB WB 41	S004S036W04	160
ADL 644258	PEB WB 42	S004S036W03	160
ADL 644259	PEB WB 43	S004S036W03	160
ADL 644260	PEB WB 44	S004S036W02	160
ADL 644261	PEB WB 45	S004S036W02	160
ADL 644262	PEB WB 46	S004S036W04	160
ADL 644263	PEB WB 47	S004S036W04	160
ADL 644264	PEB WB 48	S004S036W03	160
ADL 644265	PEB WB 49	S004S036W03	160
ADL 644266	PEB WB 50	S004S036W02	160
ADL 644267	PEB WB 51	S004S036W02	160
ADL 644268	PEB WB 52	S004S036W09	160
ADL 644269	PEB WB 53	S004S036W09	160
ADL 644270	PEB WB 54	S004S036W10	160
ADL 644271	PEB WB 55	S004S036W10	160
ADL 644272	PEB WB 56	S004S036W11	160
ADL 644273	PEB WB 57	S004S036W11	160
ADL 644274	PEB WB 58	S004S036W09	160
ADL 644275	PEB WB 59	S004S036W09	160
ADL 644276	PEB WB 60	S004S036W10	160
ADL 644277	PEB WB 61	S004S036W10	160
ADL 644278	PEB WB 62	S004S036W11	160
ADL 644279	PEB WB 63	S004S036W11	160
ADL 644304	SP 193	S005S036W12	160
ADL 644305	SP 194	S005S036W12	160
ADL 644306	SP 195	S005S036W11	160
ADL 644307	SP 196	S005S036W11	160
ADL 644308	SP 197	S005S036W10	160
ADL 644309	SP 198	S005S036W10	160
ADL 644310	SP 199	S005S036W12	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 644311	SP 200	S005S036W12	160
ADL 644316	SP 205	S005S036W13	160
ADL 644317	SP 206	S005S036W13	160
ADL 644371	SP 280	S005S037W28	160
ADL 644374	SP 283	S005S037W22	160
ADL 644375	SP 284	S005S037W22	160
ADL 644376	SP 285	S005S037W21	160
ADL 644377	SP 286	S005S037W21	160
ADL 644378	SP 287	S005S037W21	160
ADL 644379	SP 288	S005S037W21	160
ADL 644380	SP 289	S005S037W22	160
ADL 644381	SP 290	S005S037W22	160
ADL 644382	SP 291	S005S037W16	160
ADL 644383	SP 292	S005S037W16	160
ADL 644384	SP 293	S005S037W16	160
ADL 644385	SP 294	S005S037W16	160
ADL 644386	KAK 90	S003S037W33	160
ADL 644387	KAK 91	S003S037W33	160
ADL 644388	KAK 92	S003S037W32	160
ADL 644389	KAK 93	S003S037W32	160
ADL 644390	KAK 94	S003S037W33	160
ADL 644391	KAK 95	S003S037W33	160
ADL 644392	KAK 96	S003S037W28	160
ADL 644393	KAK 97	S003S037W28	160
ADL 644394	KAK 98	S003S037W29	160
ADL 644395	KAK 99	S003S037W29	160
ADL 644396	KAK 100	S003S037W28	160
ADL 644397	KAK 101	S003S037W28	160
ADL 644398	KAK 102	S003S037W22	160
ADL 644399	KAK 103	S003S037W21	160
ADL 644400	KAK 104	S003S037W21	160
ADL 644401	KAK 105	S003S037W20	160
ADL 644402	KAK 106	S003S036W05	160
ADL 644403	KAK 107	S003S036W05	160
ADL 644404	KAK 108	S003S036W06	160
ADL 644405	KAK 109	S003S036W06	160
ADL 644406	KAK 110	S003S037W01	160
ADL 644407	KAK 111	S003S037W01	160
ADL 644408	KAK 112	S003S036W06	160
ADL 644409	KAK 113	S003S036W06	160
ADL 644410	KAK 114	S003S036W05	160
ADL 644411	KAK 115	S003S036W05	160
ADL 644412	KAK 116	S002S036W32	160
ADL 644413	KAK 117	S002S036W32	160
ADL 644414	KAK 118	S002S036W31	160
ADL 644415	KAK 119	S002S036W31	160
ADL 644421	KAK 125	S002S036W31	160
ADL 644422	KAK 126	S002S036W31	160
ADL 644423	KAK 127	S002S036W32	160
ADL 644424	KAK 128	S002S036W29	160
ADL 644425	KAK 129	S002S036W30	160
ADL 644426	KAK 130	S002S036W30	160
ADL 644467	KAK 171	S002S036W28	160
ADL 644468	KAK 172	S002S036W29	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 644469	KAK 173	S002S036W32	160
ADL 644470	KAK 174	S002S036W33	160
ADL 644471	KAK 175	S002S036W33	160
ADL 644472	KAK 176	S002S036W34	160
ADL 644473	KAK 177	S002S036W34	160
ADL 644474	KAK 178	S002S036W33	160
ADL 644475	KAK 179	S002S036W33	160
ADL 644476	KAK 180	S003S036W04	160
ADL 644477	KAK 181	S003S036W04	160
ADL 644478	KAK 182	S003S036W03	160
ADL 644479	KAK 183	S003S036W03	160
ADL 644480	KAK 184	S003S036W03	160
ADL 644481	KAK 185	S003S036W03	160
ADL 644482	KAK 186	S003S036W04	160
ADL 644483	KAK 187	S003S036W04	160
ADL 644881	KAK 188	S002S036W34	160
ADL 644882	KAK 189	S002S036W34	160
ADL 644883	KAK 190	S002S036W28	160
ADL 644884	KAK 191	S002S036W27	160
ADL 644885	KAK 192	S002S036W27	160
ADL 644886	KAK 193	S002S036W27	160
ADL 644887	KAK 194	S002S036W27	160
ADL 644888	KAK 195	S002S036W28	160
ADL 644889	KAK 196	S002S036W21	160
ADL 644890	KAK 197	S002S036W21	160
ADL 644891	KAK 198	S002S036W22	160
ADL 644892	KAK 199	S002S036W22	160
ADL 644893	KAK 200	S002S036W22	160
ADL 644894	KAK 201	S002S036W22	160
ADL 644895	KAK 202	S002S036W21	160
ADL 644896	KAK 203	S002S036W21	160
ADL 644897	KAK 204	S002S036W16	160
ADL 644898	KAK 205	S002S036W16	160
ADL 644899	KAK 206	S002S036W15	160
ADL 644900	KAK 207	S002S036W15	160
ADL 644901	KAK 208	S002S036W14	160
ADL 644902	KAK 209	S002S036W14	160
ADL 644903	KAK 210	S002S036W13	160
ADL 644904	KAK 211	S002S036W13	160
ADL 644905	KAK 212	S002S036W13	160
ADL 644906	KAK 213	S002S036W13	160
ADL 644907	KAK 214	S002S036W14	160
ADL 644908	KAK 215	S002S036W14	160
ADL 644909	KAK 216	S002S036W15	160
ADL 644910	KAK 217	S002S036W15	160
ADL 644911	KAK 218	S002S036W16	160
ADL 644912	KAK 219	S002S036W16	160
ADL 645600	SP 310	S005S037W20	160
ADL 645601	SP 311	S005S037W20	160
ADL 645606	SP 316	S005S037W17	160
ADL 645607	SP 317	S005S037W17	160
ADL 645608	SP 318	S005S037W17	160
ADL 645609	SP 319	S005S037W17	160
ADL 646604	PEBBLE BEACH 5942	S003S035W18	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 646605	PEBBLE BEACH 5943	S003S035W18	40
ADL 646606	PEB K 1	S003S035W36	160
ADL 646607	PEB K 2	S003S035W36	160
ADL 646608	PEB K 3	S003S035W36	160
ADL 646609	PEB K 4	S003S035W36	160
ADL 646610	PEB K 5	S004S035W01	40
ADL 646611	PEB K 6	S004S035W01	40
ADL 646612	PEB K 7	S004S035W01	40
ADL 646613	PEB K 8	S004S035W01	40
ADL 646614	PEB K 9	S004S034W06	40
ADL 646615	PEB K 10	S004S034W06	40
ADL 646616	PEB K 11	S004S034W06	40
ADL 646617	PEB K 12	S004S034W06	40
ADL 648906	PEB WB 64	S003S036W35	160
ADL 648907	PEB WB 65	S003S036W35	160
ADL 648908	PEB WB 66	S003S036W35	160
ADL 648909	PEB WB 67	S003S036W35	160
ADL 649664	KAK 220	S002S037W23	160
ADL 649665	KAK 221	S002S037W23	160
ADL 649666	KAK 222	S002S037W22	160
ADL 649667	KAK 223	S002S037W22	160
ADL 649668	KAK 224	S002S037W21	160
ADL 649669	KAK 225	S002S037W21	160
ADL 649670	KAK 226	S002S037W20	160
ADL 649671	KAK 227	S002S037W21	160
ADL 649672	KAK 228	S002S037W21	160
ADL 649673	KAK 229	S002S037W22	160
ADL 649674	KAK 230	S002S037W22	160
ADL 649675	KAK 231	S002S037W23	160
ADL 649676	KAK 232	S002S037W23	160
ADL 649677	KAK 233	S002S037W26	160
ADL 649678	KAK 234	S002S037W26	160
ADL 649679	KAK 235	S002S037W27	160
ADL 649680	KAK 236	S002S037W27	160
ADL 649681	KAK 237	S002S037W28	160
ADL 649682	KAK 238	S002S037W28	160
ADL 649683	KAK 239	S002S037W29	160
ADL 649684	KAK 240	S002S037W29	160
ADL 649685	KAK 241	S002S037W29	160
ADL 649686	KAK 242	S002S037W29	160
ADL 649687	KAK 243	S002S037W28	160
ADL 649688	KAK 244	S002S037W28	160
ADL 649689	KAK 245	S002S037W27	160
ADL 649690	KAK 246	S002S037W27	160
ADL 649691	KAK 247	S002S037W26	160
ADL 649692	KAK 248	S002S037W35	160
ADL 649693	KAK 249	S002S037W34	160
ADL 649694	KAK 250	S002S037W34	160
ADL 649695	KAK 251	S002S037W33	160
ADL 649696	KAK 252	S002S037W33	160
ADL 649697	KAK 253	S002S037W32	160
ADL 649698	KAK 254	S002S037W32	160
ADL 649699	KAK 255	S002S037W32	160
ADL 649700	KAK 256	S002S037W32	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 649701	KAK 257	S002S037W33	160
ADL 649702	KAK 258	S002S037W33	160
ADL 649703	KAK 259	S002S037W34	160
ADL 649704	KAK 260	S002S037W34	160
ADL 649705	KAK 261	S002S037W35	160
ADL 649706	KAK 262	S002S037W35	160
ADL 649707	KAK 263	S003S037W01	160
ADL 649708	KAK 264	S003S037W02	160
ADL 649709	KAK 265	S003S037W02	160
ADL 649710	KAK 266	S003S037W03	160
ADL 649711	KAK 267	S003S037W03	160
ADL 649712	KAK 268	S003S037W04	160
ADL 649713	KAK 269	S003S037W04	160
ADL 649714	KAK 270	S003S037W05	160
ADL 649715	KAK 271	S003S037W05	160
ADL 649716	KAK 272	S003S037W05	160
ADL 649717	KAK 273	S003S037W05	160
ADL 649718	KAK 274	S003S037W04	160
ADL 649719	KAK 275	S003S037W04	160
ADL 649720	KAK 276	S003S037W03	160
ADL 649721	KAK 277	S003S037W03	160
ADL 649722	KAK 278	S003S037W02	160
ADL 649723	KAK 279	S003S037W02	160
ADL 649724	KAK 280	S003S037W01	160
ADL 649725	KAK 281	S003S037W12	160
ADL 649726	KAK 282	S003S037W11	160
ADL 649727	KAK 283	S003S037W11	160
ADL 649728	KAK 284	S003S037W10	160
ADL 649729	KAK 285	S003S037W10	160
ADL 649730	KAK 286	S003S037W09	160
ADL 649731	KAK 287	S003S037W09	160
ADL 649732	KAK 288	S003S037W08	160
ADL 649733	KAK 289	S003S037W08	160
ADL 649734	KAK 290	S003S037W08	160
ADL 649735	KAK 291	S003S037W08	160
ADL 649736	KAK 292	S003S037W09	160
ADL 649737	KAK 293	S003S037W09	160
ADL 649738	KAK 294	S003S037W10	160
ADL 649739	KAK 295	S003S037W10	160
ADL 649740	KAK 296	S003S037W11	160
ADL 649741	KAK 297	S003S037W11	160
ADL 649742	KAK 298	S003S037W12	160
ADL 649743	KAK 299	S003S037W13	160
ADL 649744	KAK 300	S003S037W14	160
ADL 649745	KAK 301	S003S037W14	160
ADL 649746	KAK 302	S003S037W15	160
ADL 649747	KAK 303	S003S037W15	160
ADL 649748	KAK 304	S003S037W16	160
ADL 649749	KAK 305	S003S037W16	160
ADL 649750	KAK 306	S003S037W17	160
ADL 649751	KAK 307	S003S037W17	160
ADL 649752	KAK 308	S003S037W17	160
ADL 649753	KAK 309	S003S037W17	160
ADL 649754	KAK 310	S003S037W16	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 649755	KAK 311	S003S037W16	160
ADL 649756	KAK 312	S003S037W15	160
ADL 649757	KAK 313	S003S037W15	160
ADL 649758	KAK 314	S003S037W14	160
ADL 649759	KAK 315	S003S037W14	160
ADL 649760	KAK 316	S003S037W13	160
ADL 649761	KAK 317	S003S037W23	160
ADL 649762	KAK 318	S003S037W23	160
ADL 649763	KAK 319	S003S037W22	160
ADL 649764	KAK 320	S003S037W22	160
ADL 649765	KAK 321	S003S037W21	160
ADL 649766	KAK 322	S003S037W21	160
ADL 649767	KAK 323	S003S037W20	160
ADL 649768	KAK 324	S003S037W20	160
ADL 649769	KAK 325	S003S037W20	160
ADL 649770	KAK 326	S003S037W29	160
ADL 657890	KAK 327	S004S037W04	160
ADL 657891	KAK 328	S004S037W04	160
ADL 657892	KAK 329	S004S037W04	160
ADL 657893	KAK 330	S004S037W09	160
ADL 657894	KAK 331	S004S037W10	160
ADL 657895	KAK 332	S004S037W10	160
ADL 657896	KAK 333	S004S037W10	160
ADL 657897	KAK 334	S004S037W10	160
ADL 657898	KAK 335	S004S037W09	160
ADL 657899	KAK 336	S004S037W16	160
ADL 657900	KAK 337	S004S037W15	160
ADL 657901	KAK 338	S004S037W15	160
ADL 657902	KAK 339	S004S037W14	160
ADL 657903	KAK 340	S004S037W14	160
ADL 657904	KAK 341	S004S037W13	160
ADL 657905	KAK 342	S004S037W13	160
ADL 657906	KAK 343	S004S037W14	160
ADL 657907	KAK 344	S004S037W14	160
ADL 657908	KAK 345	S004S037W15	160
ADL 657909	KAK 346	S004S037W15	160
ADL 657910	KAK 347	S004S037W16	160
ADL 657911	KAK 348	S004S037W21	160
ADL 657912	KAK 349	S004S037W22	160
ADL 657913	KAK 350	S004S037W22	160
ADL 657914	KAK 351	S004S037W23	160
ADL 657915	KAK 352	S004S037W23	160
ADL 657916	KAK 353	S004S037W24	160
ADL 657917	KAK 354	S004S037W24	160
ADL 657918	KAK 355	S004S037W23	160
ADL 657919	KAK 356	S004S037W23	160
ADL 657920	KAK 357	S004S037W22	160
ADL 657921	KAK 358	S004S037W22	160
ADL 657922	KAK 359	S004S037W21	160
ADL 657923	KAK 360	S004S037W28	160
ADL 657924	KAK 361	S004S037W27	160
ADL 657925	KAK 362	S004S037W27	160
ADL 657926	KAK 363	S004S037W26	160
ADL 657927	KAK 364	S004S037W26	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 657928	KAK 365	S004S037W25	160
ADL 657929	KAK 366	S004S037W25	160
ADL 657930	KAK 367	S004S037W26	160
ADL 657931	KAK 368	S004S037W26	160
ADL 657932	KAK 369	S004S037W27	160
ADL 657933	KAK 370	S004S037W27	160
ADL 657934	KAK 371	S004S037W28	160
ADL 657935	KAK 372	S004S037W33	160
ADL 657936	KAK 373	S004S037W34	160
ADL 657937	KAK 374	S004S037W34	160
ADL 657938	KAK 375	S004S037W35	160
ADL 657939	KAK 376	S004S037W35	160
ADL 657940	KAK 377	S004S037W36	160
ADL 657941	KAK 378	S004S037W36	160
ADL 657942	KAK 379	S004S037W35	160
ADL 657943	KAK 380	S004S037W35	160
ADL 657944	KAK 381	S004S037W34	160
ADL 657945	KAK 382	S004S037W34	160
ADL 657946	KAK 383	S004S037W33	160
ADL 657947	KAK 384	S005S037W06	160
ADL 657948	KAK 385	S005S037W05	160
ADL 657949	KAK 386	S005S037W05	160
ADL 657950	KAK 387	S005S037W04	160
ADL 657951	KAK 388	S005S037W04	160
ADL 657952	KAK 389	S005S037W04	160
ADL 657953	KAK 390	S005S037W04	160
ADL 657954	KAK 391	S005S037W05	160
ADL 657955	KAK 392	S005S037W05	160
ADL 657958	KAK 395	S005S037W08	160
ADL 657959	KAK 396	S005S037W08	160
ADL 657960	KAK 397	S005S037W09	160
ADL 657961	KAK 398	S005S037W09	160
ADL 657962	KAK 399	S005S037W09	160
ADL 657963	KAK 400	S005S037W09	160
ADL 657964	KAK 401	S005S037W08	160
ADL 657965	KAK 402	S005S037W08	160
ADL 663828	KAK 136A	S002S036W30	160
ADL 663829	KAK 137A	S002S036W30	160
ADL 663830	KAK 138A	S002S036W19	160
ADL 663831	KAK 139A	S002S036W19	160
ADL 663832	KAK 144A	S002S036W19	160
ADL 663833	KAK 145A	S002S036W19	160
ADL 663834	KAK 146A	S002S036W18	160
ADL 663835	KAK 147A	S002S036W18	160
ADL 663836	KAK 158A	S002S036W18	160
ADL 663837	KAK 159A	S002S036W18	160
ADL 663838	KAK 160A	S002S036W17	160
ADL 663839	KAK 161A	S002S036W17	160
ADL 663840	KAK 162A	S002S036W17	160
ADL 663841	KAK 163A	S002S036W17	160
ADL 663842	KAK 164A	S002S036W20	160
ADL 663843	KAK 165A	S002S036W20	160
ADL 663844	KAK 166A	S002S036W20	160
ADL 663845	KAK 167A	S002S036W20	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 663846	KAK 168A	S002S036W29	160
ADL 663847	KAK 169A	S002S036W29	160
ADL 663848	KAK 170A	S002S036W28	160
ADL 668740	PEBA 113	S003S033W31	160
ADL 668741	KAS 1	S005S037W19	160
ADL 668742	KAS 2	S005S037W19	160
ADL 668743	KAS 3	S005S037W20	160
ADL 668744	KAS 4	S005S037W20	160
ADL 668749	KAS 9	S005S037W30	160
ADL 668750	KAS 10	S005S037W30	160
ADL 668751	KAS 11	S005S037W29	160
ADL 668752	KAS 12	S005S037W29	160
ADL 668753	KAS 13	S005S037W28	160
ADL 668758	KAS 18	S005S037W30	160
ADL 668759	KAS 19	S005S037W30	160
ADL 668760	KAS 20	S005S037W29	160
ADL 668761	KAS 21	S005S037W29	160
ADL 668762	KAS 22	S005S037W28	160
ADL 668769	KAS 29	S005S037W31	160
ADL 668770	KAS 30	S005S037W31	160
ADL 668771	KAS 31	S005S037W32	160
ADL 668772	KAS 32	S005S037W32	160
ADL 668773	KAS 33	S005S037W33	160
ADL 668784	KAS 44	S005S037W31	160
ADL 668785	KAS 45	S005S037W31	160
ADL 668786	KAS 46	S005S037W32	160
ADL 668787	KAS 47	S005S037W32	160
ADL 668788	KAS 48	S005S037W33	160
ADL 668801	KAS 61	S006S038W01	160
ADL 668802	KAS 62	S006S037W06	160
ADL 668803	KAS 63	S006S037W06	160
ADL 668804	KAS 64	S006S037W05	160
ADL 668805	KAS 65	S006S037W05	160
ADL 668806	KAS 66	S006S037W04	160
ADL 668823	KAS 83	S006S038W02	160
ADL 668824	KAS 84	S006S038W01	160
ADL 668825	KAS 85	S006S038W01	160
ADL 668826	KAS 86	S006S037W06	160
ADL 668827	KAS 87	S006S037W06	160
ADL 668828	KAS 88	S006S037W05	160
ADL 668829	KAS 89	S006S037W05	160
ADL 668849	KAS 109	S006S038W11	160
ADL 668850	KAS 110	S006S038W11	160
ADL 668851	KAS 111	S006S038W12	160
ADL 668852	KAS 112	S006S038W12	160
ADL 668853	KAS 113	S006S037W07	160
ADL 668854	KAS 114	S006S037W07	160
ADL 668855	KAS 115	S006S037W08	160
ADL 668875	KAS 135	S006S038W10	160
ADL 668876	KAS 136	S006S038W11	160
ADL 668877	KAS 137	S006S038W11	160
ADL 668878	KAS 138	S006S038W12	160
ADL 668879	KAS 139	S006S038W12	160
ADL 668880	KAS 140	S006S037W07	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 668881	KAS 141	S006S037W07	160
ADL 668901	KAS 161	S006S038W15	160
ADL 668902	KAS 162	S006S038W15	160
ADL 668903	KAS 163	S006S038W14	160
ADL 668904	KAS 164	S006S038W14	160
ADL 668905	KAS 165	S006S038W13	160
ADL 668906	KAS 166	S006S038W13	160
ADL 668929	KAS 189	S006S038W15	160
ADL 668930	KAS 190	S006S038W15	160
ADL 668931	KAS 191	S006S038W14	160
ADL 668932	KAS 192	S006S038W14	160
ADL 668933	KAS 193	S006S038W13	160
ADL 668934	KAS 194	S006S038W13	160
ADL 668956	KAS 216	S006S038W21	160
ADL 668957	KAS 217	S006S038W22	160
ADL 668958	KAS 218	S006S038W22	160
ADL 668959	KAS 219	S006S038W23	160
ADL 668960	KAS 220	S006S038W23	160
ADL 668961	KAS 221	S006S038W24	160
ADL 668983	KAS 243	S006S038W21	160
ADL 668984	KAS 244	S006S038W21	160
ADL 668985	KAS 245	S006S038W22	160
ADL 668986	KAS 246	S006S038W22	160
ADL 668987	KAS 247	S006S038W23	160
ADL 668988	KAS 248	S006S038W23	160
ADL 669010	KAS 270	S006S038W29	160
ADL 669011	KAS 271	S006S038W28	160
ADL 669012	KAS 272	S006S038W28	160
ADL 669013	KAS 273	S006S038W27	160
ADL 669014	KAS 274	S006S038W27	160
ADL 669015	KAS 275	S006S038W26	160
ADL 669038	KAS 298	S006S038W29	160
ADL 669039	KAS 299	S006S038W28	160
ADL 669040	KAS 300	S006S038W28	160
ADL 669041	KAS 301	S006S038W27	160
ADL 669042	KAS 302	S006S038W27	160
ADL 669043	KAS 303	S006S038W26	160
ADL 669060	KAS 324	S006S038W32	160
ADL 669061	KAS 325	S006S038W32	160
ADL 669062	KAS 326	S006S038W33	160
ADL 669063	KAS 327	S006S038W33	160
ADL 669064	KAS 328	S006S038W34	160
ADL 669065	KAS 329	S006S038W34	160
ADL 669075	KAS 340	S006S038W32	160
ADL 669076	KAS 341	S006S038W32	160
ADL 669077	KAS 342	S006S038W33	160
ADL 669078	KAS 343	S006S038W33	160
ADL 669079	KAS 344	S006S038W34	160
ADL 669087	KAS 352	S007S038W06	160
ADL 669088	KAS 353	S007S038W05	160
ADL 669089	KAS 354	S007S038W05	160
ADL 669090	KAS 355	S007S038W04	160
ADL 669091	KAS 356	S007S038W04	160
ADL 669098	KAS 363	S007S038W06	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 669099	KAS 364	S007S038W06	160
ADL 669100	KAS 365	S007S038W05	160
ADL 669101	KAS 366	S007S038W05	160
ADL 669102	KAS 367	S007S038W04	160
ADL 669109	KAS 374	S007S038W07	160
ADL 669110	KAS 375	S007S038W07	160
ADL 669111	KAS 376	S007S038W08	160
ADL 669112	KAS 377	S007S038W08	160
ADL 669118	KAS 383	S007S039W12	160
ADL 669119	KAS 384	S007S038W07	160
ADL 669120	KAS 385	S007S038W07	160
ADL 669121	KAS 386	S007S038W08	160
ADL 669122	KAS 387	S007S038W08	160
ADL 669127	KAS 392	S007S039W13	160
ADL 669128	KAS 393	S007S038W18	160
ADL 669129	KAS 394	S007S038W18	160
ADL 669130	KAS 395	S007S038W17	160
ADL 669135	KAS 400	S007S039W13	160
ADL 669136	KAS 401	S007S039W13	160
ADL 669137	KAS 402	S007S038W18	160
ADL 669138	KAS 403	S007S038W18	160

Mineral Claims

Pebble West Claims Corp.
3201 C Street, Suite 602
Anchorage, AK 99503

ADL No.	Claim Name	MTRS	Total Acres
ADL 516769	SILL 5951	S004S035W12	40
ADL 516770	SILL 5952	S004S035W12	40
ADL 516779	SILL 6051	S004S035W12	40
ADL 516780	SILL 6052	S004S035W12	40
ADL 516789	SILL 6151	S004S035W12	40
ADL 516790	SILL 6152	S004S035W12	40
ADL 516797	SILL 6247	S004S035W11	40
ADL 516798	SILL 6248	S004S035W11	40
ADL 516799	SILL 6249	S004S035W12	40
ADL 516800	SILL 6250	S004S035W12	40
ADL 516801	SILL 6251	S004S035W12	40
ADL 516802	SILL 6252	S004S035W12	40
ADL 516806	PEBBLE BEACH 5448	S003S035W20	40
ADL 516807	PEBBLE BEACH 5449	S003S035W20	40
ADL 516808	PEBBLE BEACH 5450	S003S035W21	40
ADL 516809	PEBBLE BEACH 5451	S003S035W21	40
ADL 516810	PEBBLE BEACH 5452	S003S035W21	40
ADL 516811	PEBBLE BEACH 5453	S003S035W21	40
ADL 516812	PEBBLE BEACH 5454	S003S035W22	40
ADL 516813	PEBBLE BEACH 5548	S003S035W20	40
ADL 516814	PEBBLE BEACH 5549	S003S035W20	40
ADL 516815	PEBBLE BEACH 5550	S003S035W21	40
ADL 516816	PEBBLE BEACH 5551	S003S035W21	40
ADL 516817	PEBBLE BEACH 5552	S003S035W21	40
ADL 516818	PEBBLE BEACH 5553	S003S035W21	40
ADL 516819	PEBBLE BEACH 5554	S003S035W22	40
ADL 516820	PEBBLE BEACH 5651	S003S035W21	40
ADL 516821	PEBBLE BEACH 5652	S003S035W21	40
ADL 516822	PEBBLE BEACH 5653	S003S035W21	40
ADL 516823	PEBBLE BEACH 5654	S003S035W22	40
ADL 516824	PEBBLE BEACH 5751	S003S035W21	40
ADL 516825	PEBBLE BEACH 5752	S003S035W21	40
ADL 516826	PEBBLE BEACH 5753	S003S035W21	40
ADL 516827	PEBBLE BEACH 5754	S003S035W22	40
ADL 516828	PEBBLE BEACH 5852	S003S035W16	40
ADL 516829	PEBBLE BEACH 5853	S003S035W16	40
ADL 516830	PEBBLE BEACH 5854	S003S035W15	40
ADL 516831	PEBBLE BEACH 5952	S003S035W16	40
ADL 516832	PEBBLE BEACH 5953	S003S035W16	40
ADL 516833	PEBBLE BEACH 5954	S003S035W15	40
ADL 516834	PEBBLE BEACH 6052	S003S035W16	40
ADL 516835	PEBBLE BEACH 6053	S003S035W16	40
ADL 516836	PEBBLE BEACH 6054	S003S035W15	40
ADL 516837	PEBBLE BEACH 6153	S003S035W16	40
ADL 516838	PEBBLE BEACH 6154	S003S035W15	40
ADL 516839	PEBBLE BEACH 4651	S003S035W33	40
ADL 516840	PEBBLE BEACH 4652	S003S035W33	40
ADL 516841	PEBBLE BEACH 4653	S003S035W33	40
ADL 516842	PEBBLE BEACH 4751	S003S035W33	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 516843	PEEBLE BEACH 4752	S003S035W33	40
ADL 516844	PEEBLE BEACH 4753	S003S035W33	40
ADL 516845	PEEBLE BEACH 4851	S003S035W33	40
ADL 516846	PEEBLE BEACH 4852	S003S035W33	40
ADL 516847	PEEBLE BEACH 4853	S003S035W33	40
ADL 516848	PEEBLE BEACH 4951	S003S035W33	40
ADL 516849	PEEBLE BEACH 4952	S003S035W33	40
ADL 516850	PEEBLE BEACH 4953	S003S035W33	40
ADL 516851	PEEBLE BEACH 5048	S003S035W29	40
ADL 516852	PEEBLE BEACH 5049	S003S035W29	40
ADL 516853	PEEBLE BEACH 5050	S003S035W28	40
ADL 516854	PEEBLE BEACH 5051	S003S035W28	40
ADL 516855	PEEBLE BEACH 5052	S003S035W28	40
ADL 516856	PEEBLE BEACH 5053	S003S035W28	40
ADL 516857	PEEBLE BEACH 5148	S003S035W29	40
ADL 516858	PEEBLE BEACH 5149	S003S035W29	40
ADL 516859	PEEBLE BEACH 5150	S003S035W28	40
ADL 516860	PEEBLE BEACH 5151	S003S035W28	40
ADL 516861	PEEBLE BEACH 5152	S003S035W28	40
ADL 516862	PEEBLE BEACH 5153	S003S035W28	40
ADL 516863	PEEBLE BEACH 5248	S003S035W29	40
ADL 516864	PEEBLE BEACH 5249	S003S035W29	40
ADL 516865	PEEBLE BEACH 5250	S003S035W28	40
ADL 516866	PEEBLE BEACH 5251	S003S035W28	40
ADL 516867	PEEBLE BEACH 5252	S003S035W28	40
ADL 516868	PEEBLE BEACH 5253	S003S035W28	40
ADL 516869	PEEBLE BEACH 5348	S003S035W29	40
ADL 516870	PEEBLE BEACH 5349	S003S035W29	40
ADL 516871	PEEBLE BEACH 5350	S003S035W28	40
ADL 516872	PEEBLE BEACH 5351	S003S035W28	40
ADL 516873	PEEBLE BEACH 5352	S003S035W28	40
ADL 516874	PEEBLE BEACH 5353	S003S035W28	40
ADL 516879	SILL 6351	S004S035W01	40
ADL 516880	SILL 6352	S004S035W01	40
ADL 516888	SILL 6451	S004S035W01	40
ADL 516889	SILL 6452	S004S035W01	40
ADL 516948	PEBBLE BEACH 3850	S004S035W09	40
ADL 516949	PEBBLE BEACH 3851	S004S035W09	40
ADL 516950	PEBBLE BEACH 3852	S004S035W09	40
ADL 516951	PEBBLE BEACH 3950	S004S035W09	40
ADL 516952	PEBBLE BEACH 3951	S004S035W09	40
ADL 516953	PEBBLE BEACH 3952	S004S035W09	40
ADL 516954	PEBBLE BEACH 4050	S004S035W09	40
ADL 516955	PEBBLE BEACH 4051	S004S035W09	40
ADL 516956	PEBBLE BEACH 4052	S004S035W09	40
ADL 516957	PEBBLE BEACH 4150	S004S035W09	40
ADL 516958	PEBBLE BEACH 4151	S004S035W09	40
ADL 516959	PEBBLE BEACH 4152	S004S035W09	40
ADL 516960	PEBBLE BEACH 4250	S004S035W04	40
ADL 516961	PEBBLE BEACH 4251	S004S035W04	40
ADL 516962	PEBBLE BEACH 4252	S004S035W04	40
ADL 516963	PEBBLE BEACH 4253	S004S035W04	40
ADL 516964	PEBBLE BEACH 4254	S004S035W03	40
ADL 516965	PEBBLE BEACH 4350	S004S035W04	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 516966	PEBBLE BEACH 4351	S004S035W04	40
ADL 516967	PEBBLE BEACH 4352	S004S035W04	40
ADL 516968	PEBBLE BEACH 4353	S004S035W04	40
ADL 516969	PEBBLE BEACH 4354	S004S035W03	40
ADL 516970	PEBBLE BEACH 4451	S004S035W04	40
ADL 516971	PEBBLE BEACH 4452	S004S035W04	40
ADL 516972	PEBBLE BEACH 4453	S004S035W04	40
ADL 516973	PEBBLE BEACH 4551	S004S035W04	40
ADL 516974	PEBBLE BEACH 4552	S004S035W04	40
ADL 516975	PEBBLE BEACH 4553	S004S035W04	40
ADL 524511	SILL 5543	S004S035W15	40
ADL 524512	SILL 5544	S004S035W15	40
ADL 524515	SILL 5643	S004S035W15	40
ADL 524516	SILL 5644	S004S035W15	40
ADL 524519	SILL 5743	S004S035W15	40
ADL 524520	SILL 5744	S004S035W15	40
ADL 524523	SILL 5843	S004S035W15	40
ADL 524524	SILL 5844	S004S035W15	40
ADL 524527	SILL 5943	S004S035W10	40
ADL 524528	SILL 5944	S004S035W10	40
ADL 524531	SILL 6043	S004S035W10	40
ADL 524532	SILL 6044	S004S035W10	40
ADL 524535	SILL 6143	S004S035W10	40
ADL 524536	SILL 6144	S004S035W10	40
ADL 524539	SILL 6243	S004S035W10	40
ADL 524540	SILL 6244	S004S035W10	40
ADL 524541	SILL 6245	S004S035W11	40
ADL 524542	SILL 6246	S004S035W11	40
ADL 524543	SILL 6343	S004S035W03	40
ADL 524544	SILL 6344	S004S035W03	40
ADL 524550	SILL 6443	S004S035W03	40
ADL 524551	SILL 6444	S004S035W03	40
ADL 524557	SILL 6543	S004S035W03	40
ADL 524558	SILL 6544	S004S035W03	40
ADL 524568	SILL 6643	S004S035W03	40
ADL 524569	SILL 6644	S004S035W03	40
ADL 524579	SILL 6743	S003S035W34	40
ADL 524580	SILL 6744	S003S035W34	40
ADL 524595	SILL 6843	S003S035W34	40
ADL 524596	SILL 6844	S003S035W34	40
ADL 524611	SILL 6943	S003S035W34	40
ADL 524612	SILL 6944	S003S035W34	40
ADL 524630	SILL 7043	S003S035W34	40
ADL 524631	SILL 7044	S003S035W34	40
ADL 524649	SILL 7143	S003S035W27	40
ADL 524650	SILL 7144	S003S035W27	40
ADL 524668	SILL 7243	S003S035W27	40
ADL 524669	SILL 7244	S003S035W27	40
ADL 524684	SILL 7343	S003S035W27	40
ADL 524685	SILL 7344	S003S035W27	40
ADL 524698	SILL 7443	S003S035W27	40
ADL 524699	SILL 7444	S003S035W27	40
ADL 524712	SILL 7543	S003S035W22	40
ADL 524713	SILL 7544	S003S035W22	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 524714	SILL 7545	S003S035W23	40
ADL 524715	SILL 7546	S003S035W23	40
ADL 524716	SILL 7547	S003S035W23	40
ADL 524717	SILL 7548	S003S035W23	40
ADL 524748	PEBBLE BEACH 3452	S004S035W16	40
ADL 524749	PEBBLE BEACH 3453	S004S035W16	40
ADL 524750	PEBBLE BEACH 3454	S004S035W15	40
ADL 524751	PEBBLE BEACH 3455	S004S035W15	40
ADL 524752	PEBBLE BEACH 3552	S004S035W16	40
ADL 524753	PEBBLE BEACH 3553	S004S035W16	40
ADL 524754	PEBBLE BEACH 3554	S004S035W15	40
ADL 524755	PEBBLE BEACH 3555	S004S035W15	40
ADL 524756	PEBBLE BEACH 3652	S004S035W16	40
ADL 524757	PEBBLE BEACH 3653	S004S035W16	40
ADL 524758	PEBBLE BEACH 3654	S004S035W15	40
ADL 524759	PEBBLE BEACH 3655	S004S035W15	40
ADL 524760	PEBBLE BEACH 3752	S004S035W16	40
ADL 524761	PEBBLE BEACH 3753	S004S035W16	40
ADL 524762	PEBBLE BEACH 3754	S004S035W15	40
ADL 524763	PEBBLE BEACH 3755	S004S035W15	40
ADL 524764	PEBBLE BEACH 3848	S004S035W08	40
ADL 524765	PEBBLE BEACH 3849	S004S035W08	40
ADL 524766	PEBBLE BEACH 3853	S004S035W09	40
ADL 524767	PEBBLE BEACH 3854	S004S035W10	40
ADL 524768	PEBBLE BEACH 3855	S004S035W10	40
ADL 524769	PEBBLE BEACH 3948	S004S035W08	40
ADL 524770	PEBBLE BEACH 3949	S004S035W08	40
ADL 524771	PEBBLE BEACH 3953	S004S035W09	40
ADL 524772	PEBBLE BEACH 3954	S004S035W10	40
ADL 524773	PEBBLE BEACH 3955	S004S035W10	40
ADL 524774	PEBBLE BEACH 4048	S004S035W08	40
ADL 524775	PEBBLE BEACH 4049	S004S035W08	40
ADL 524776	PEBBLE BEACH 4053	S004S035W09	40
ADL 524777	PEBBLE BEACH 4054	S004S035W10	40
ADL 524778	PEBBLE BEACH 4055	S004S035W10	40
ADL 524779	PEBBLE BEACH 4148	S004S035W08	40
ADL 524780	PEBBLE BEACH 4149	S004S035W08	40
ADL 524781	PEBBLE BEACH 4153	S004S035W09	40
ADL 524782	PEBBLE BEACH 4154	S004S035W10	40
ADL 524783	PEBBLE BEACH 4155	S004S035W10	40
ADL 524784	PEBBLE BEACH 4248	S004S035W05	0
ADL 524785	PEBBLE BEACH 4249	S004S035W05	40
ADL 524786	PEBBLE BEACH 4255	S004S035W03	40
ADL 524787	PEBBLE BEACH 4348	S004S035W05	40
ADL 524788	PEBBLE BEACH 4349	S004S035W05	40
ADL 524789	PEBBLE BEACH 4355	S004S035W03	40
ADL 524790	PEBBLE BEACH 4448	S004S035W05	40
ADL 524791	PEBBLE BEACH 4449	S004S035W05	40
ADL 524792	PEBBLE BEACH 4450	S004S035W04	40
ADL 524793	PEBBLE BEACH 4454	S004S035W03	40
ADL 524794	PEBBLE BEACH 4455	S004S035W03	40
ADL 524795	PEBBLE BEACH 4548	S004S035W05	40
ADL 524796	PEBBLE BEACH 4549	S004S035W05	40
ADL 524797	PEBBLE BEACH 4550	S004S035W04	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 524798	PEBBLE BEACH 4554	S004S035W03	40
ADL 524799	PEBBLE BEACH 4555	S004S035W03	40
ADL 524800	PEBBLE BEACH 4648	S003S035W32	40
ADL 524801	PEBBLE BEACH 4649	S003S035W32	40
ADL 524802	PEBBLE BEACH 4650	S003S035W33	40
ADL 524803	PEBBLE BEACH 4654	S003S035W34	40
ADL 524804	PEBBLE BEACH 4655	S003S035W34	40
ADL 524805	PEBBLE BEACH 4748	S003S035W32	40
ADL 524806	PEBBLE BEACH 4749	S003S035W32	40
ADL 524807	PEBBLE BEACH 4750	S003S035W33	40
ADL 524808	PEBBLE BEACH 4754	S003S035W34	40
ADL 524809	PEBBLE BEACH 4755	S003S035W34	40
ADL 524810	PEBBLE BEACH 4848	S003S035W32	40
ADL 524811	PEBBLE BEACH 4849	S003S035W32	40
ADL 524812	PEBBLE BEACH 4850	S003S035W33	40
ADL 524813	PEBBLE BEACH 4854	S003S035W34	40
ADL 524814	PEBBLE BEACH 4855	S003S035W34	40
ADL 524815	PEBBLE BEACH 4948	S003S035W32	40
ADL 524816	PEBBLE BEACH 4949	S003S035W32	40
ADL 524817	PEBBLE BEACH 4950	S003S035W33	40
ADL 524818	PEBBLE BEACH 4954	S003S035W34	40
ADL 524819	PEBBLE BEACH 4955	S003S035W34	40
ADL 524820	PEBBLE BEACH 5054	S003S035W27	40
ADL 524821	PEBBLE BEACH 5055	S003S035W27	40
ADL 524822	PEBBLE BEACH 5154	S003S035W27	40
ADL 524823	PEBBLE BEACH 5155	S003S035W27	40
ADL 524824	PEBBLE BEACH 5254	S003S035W27	40
ADL 524825	PEBBLE BEACH 5255	S003S035W27	40
ADL 524826	PEBBLE BEACH 5354	S003S035W27	40
ADL 524827	PEBBLE BEACH 5355	S003S035W27	40
ADL 524828	PEBBLE BEACH 5455	S003S035W22	40
ADL 524829	PEBBLE BEACH 5648	S003S035W20	40
ADL 524830	PEBBLE BEACH 5649	S003S035W20	40
ADL 524831	PEBBLE BEACH 5650	S003S035W21	40
ADL 524832	PEBBLE BEACH 5748	S003S035W20	40
ADL 524833	PEBBLE BEACH 5749	S003S035W20	40
ADL 524834	PEBBLE BEACH 5750	S003S035W21	40
ADL 524835	PEBBLE BEACH 5848	S003S035W17	40
ADL 524836	PEBBLE BEACH 5849	S003S035W17	40
ADL 524837	PEBBLE BEACH 5850	S003S035W16	40
ADL 524838	PEBBLE BEACH 5851	S003S035W16	40
ADL 524839	PEBBLE BEACH 5948	S003S035W17	40
ADL 524840	PEBBLE BEACH 5949	S003S035W17	40
ADL 524841	PEBBLE BEACH 5950	S003S035W16	40
ADL 524842	PEBBLE BEACH 5951	S003S035W16	40
ADL 524843	PEBBLE BEACH 6048	S003S035W17	40
ADL 524844	PEBBLE BEACH 6049	S003S035W17	40
ADL 524845	PEBBLE BEACH 6050	S003S035W16	40
ADL 524846	PEBBLE BEACH 6051	S003S035W16	40
ADL 524847	PEBBLE BEACH 6148	S003S035W17	40
ADL 524848	PEBBLE BEACH 6149	S003S035W17	40
ADL 524849	PEBBLE BEACH 6150	S003S035W16	40
ADL 524850	PEBBLE BEACH 6151	S003S035W16	40
ADL 524851	PEBBLE BEACH 6248	S003S035W08	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 524852	PEBBLE BEACH 6249	S003S035W08	40
ADL 524853	PEBBLE BEACH 6250	S003S035W09	40
ADL 524854	PEBBLE BEACH 6251	S003S035W09	40
ADL 524855	PEBBLE BEACH 6252	S003S035W09	40
ADL 524856	PEBBLE BEACH 6253	S003S035W09	40
ADL 524857	PEBBLE BEACH 6254	S003S035W10	40
ADL 524858	PEBBLE BEACH 6348	S003S035W08	40
ADL 524859	PEBBLE BEACH 6349	S003S035W08	40
ADL 524860	PEBBLE BEACH 6350	S003S035W09	40
ADL 524861	PEBBLE BEACH 6351	S003S035W09	40
ADL 524862	PEBBLE BEACH 6352	S003S035W09	40
ADL 524863	PEBBLE BEACH 6353	S003S035W09	40
ADL 524864	PEBBLE BEACH 6354	S003S035W10	40
ADL 525849	PEBBLE BEACH 6152	S003S035W16	40
ADL 531355	PEBBLE BEACH 3642	S004S035W18	40
ADL 531356	PEBBLE BEACH 3643	S004S035W18	40
ADL 531357	PEBBLE BEACH 3644	S004S035W18	40
ADL 531358	PEBBLE BEACH 3645	S004S035W18	40
ADL 531359	PEBBLE BEACH 3742	S004S035W18	40
ADL 531360	PEBBLE BEACH 3743	S004S035W18	40
ADL 531361	PEBBLE BEACH 3744	S004S035W18	40
ADL 531362	PEBBLE BEACH 3745	S004S035W18	40
ADL 531363	PEBBLE BEACH 3842	S004S035W07	40
ADL 531364	PEBBLE BEACH 3843	S004S035W07	40
ADL 531365	PEBBLE BEACH 3844	S004S035W07	40
ADL 531366	PEBBLE BEACH 3845	S004S035W07	40
ADL 531367	PEBBLE BEACH 3846	S004S035W08	40
ADL 531368	PEBBLE BEACH 3847	S004S035W08	40
ADL 531369	PEBBLE BEACH 3942	S004S035W07	40
ADL 531370	PEBBLE BEACH 3943	S004S035W07	40
ADL 531371	PEBBLE BEACH 3944	S004S035W07	40
ADL 531372	PEBBLE BEACH 3945	S004S035W07	40
ADL 531373	PEBBLE BEACH 3946	S004S035W08	40
ADL 531374	PEBBLE BEACH 3947	S004S035W08	40
ADL 531375	PEBBLE BEACH 4042	S004S035W07	40
ADL 531376	PEBBLE BEACH 4043	S004S035W07	40
ADL 531377	PEBBLE BEACH 4044	S004S035W07	40
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ADL 531379	PEBBLE BEACH 4046	S004S035W08	40
ADL 531380	PEBBLE BEACH 4047	S004S035W08	40
ADL 531381	PEBBLE BEACH 4142	S004S035W07	40
ADL 531382	PEBBLE BEACH 4143	S004S035W07	40
ADL 531383	PEBBLE BEACH 4144	S004S035W07	40
ADL 531384	PEBBLE BEACH 4145	S004S035W07	40
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ADL 531386	PEBBLE BEACH 4147	S004S035W08	40
ADL 531387	PEBBLE BEACH 4244	S004S035W06	40
ADL 531388	PEBBLE BEACH 4245	S004S035W06	40
ADL 531389	PEBBLE BEACH 4246	S004S035W05	40
ADL 531390	PEBBLE BEACH 4247	S004S035W05	40
ADL 531391	PEBBLE BEACH 4344	S004S035W06	40
ADL 531392	PEBBLE BEACH 4345	S004S035W06	40
ADL 531393	PEBBLE BEACH 4346	S004S035W05	40
ADL 531394	PEBBLE BEACH 4347	S004S035W05	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 531395	PEBBLE BEACH 4444	S004S035W06	40
ADL 531396	PEBBLE BEACH 4445	S004S035W06	40
ADL 531397	PEBBLE BEACH 4446	S004S035W05	40
ADL 531398	PEBBLE BEACH 4447	S004S035W05	40
ADL 531399	PEBBLE BEACH 4544	S004S035W06	40
ADL 531400	PEBBLE BEACH 4547	S004S035W05	40
ADL 531401	PEBBLE BEACH 4644	S003S035W31	40
ADL 531402	PEBBLE BEACH 4645	S003S035W31	40
ADL 531403	PEBBLE BEACH 4646	S003S035W32	40
ADL 531404	PEBBLE BEACH 4647	S003S035W32	40
ADL 531405	PEBBLE BEACH 4744	S003S035W31	40
ADL 531406	PEBBLE BEACH 4745	S003S035W31	40
ADL 531407	PEBBLE BEACH 4746	S003S035W32	40
ADL 531408	PEBBLE BEACH 4747	S003S035W32	40
ADL 531409	PEBBLE BEACH 4844	S003S035W31	40
ADL 531410	PEBBLE BEACH 4845	S003S035W31	40
ADL 531411	PEBBLE BEACH 4846	S003S035W32	40
ADL 531412	PEBBLE BEACH 4847	S003S035W32	40
ADL 531413	PEBBLE BEACH 4944	S003S035W31	40
ADL 531414	PEBBLE BEACH 4945	S003S035W31	40
ADL 531415	PEBBLE BEACH 4946	S003S035W32	40
ADL 531416	PEBBLE BEACH 4947	S003S035W32	40
ADL 531417	PEBBLE BEACH 5044	S003S035W30	40
ADL 531418	PEBBLE BEACH 5045	S003S035W30	40
ADL 531419	PEBBLE BEACH 5046	S003S035W29	40
ADL 531420	PEBBLE BEACH 5047	S003S035W29	40
ADL 531421	PEBBLE BEACH 5144	S003S035W30	40
ADL 531422	PEBBLE BEACH 5145	S003S035W30	40
ADL 531423	PEBBLE BEACH 5146	S003S035W29	40
ADL 531424	PEBBLE BEACH 5147	S003S035W29	40
ADL 531425	PEBBLE BEACH 5244	S003S035W30	40
ADL 531426	PEBBLE BEACH 5245	S003S035W30	40
ADL 531427	PEBBLE BEACH 5246	S003S035W29	40
ADL 531428	PEBBLE BEACH 5247	S003S035W29	40
ADL 531429	PEBBLE BEACH 5344	S003S035W30	40
ADL 531430	PEBBLE BEACH 5345	S003S035W30	40
ADL 531431	PEBBLE BEACH 5346	S003S035W29	40
ADL 531432	PEBBLE BEACH 5347	S003S035W29	40
ADL 531433	PEBBLE BEACH 5444	S003S035W19	40
ADL 531434	PEBBLE BEACH 5445	S003S035W19	40
ADL 531435	PEBBLE BEACH 5446	S003S035W20	40
ADL 531436	PEBBLE BEACH 5447	S003S035W20	40
ADL 531437	PEBBLE BEACH 5544	S003S035W19	40
ADL 531438	PEBBLE BEACH 5545	S003S035W19	40
ADL 531439	PEBBLE BEACH 5546	S003S035W20	40
ADL 531440	PEBBLE BEACH 5547	S003S035W20	40
ADL 531441	PEBBLE BEACH 5644	S003S035W19	40
ADL 531442	PEBBLE BEACH 5645	S003S035W19	40
ADL 531443	PEBBLE BEACH 5646	S003S035W20	40
ADL 531444	PEBBLE BEACH 5647	S003S035W20	40
ADL 531445	PEBBLE BEACH 5744	S003S035W19	40
ADL 531446	PEBBLE BEACH 5745	S003S035W19	40
ADL 531447	PEBBLE BEACH 5746	S003S035W20	40
ADL 531448	PEBBLE BEACH 5747	S003S035W20	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 531449	PEBBLE BEACH 5844	S003S035W18	40
ADL 531450	PEBBLE BEACH 5845	S003S035W18	40
ADL 531451	PEBBLE BEACH 5846	S003S035W17	40
ADL 531452	PEBBLE BEACH 5847	S003S035W17	40
ADL 531453	PEBBLE BEACH 5944	S003S035W18	40
ADL 531454	PEBBLE BEACH 5945	S003S035W18	40
ADL 531455	PEBBLE BEACH 5946	S003S035W17	40
ADL 531456	PEBBLE BEACH 5947	S003S035W17	40
ADL 531457	PEBBLE BEACH 6044	S003S035W18	40
ADL 531458	PEBBLE BEACH 6045	S003S035W18	40
ADL 531459	PEBBLE BEACH 6046	S003S035W17	40
ADL 531460	PEBBLE BEACH 6047	S003S035W17	40
ADL 531461	PEBBLE BEACH 6144	S003S035W18	40
ADL 531462	PEBBLE BEACH 6145	S003S035W18	40
ADL 531463	PEBBLE BEACH 6146	S003S035W17	40
ADL 531464	PEBBLE BEACH 6147	S003S035W17	40
ADL 531648	PEBBLE BEACH 4545	S004S035W06	40
ADL 531649	PEBBLE BEACH 4546	S004S035W05	40
ADL 540399	PEBBLE BEACH 5555	S003S035W22	40
ADL 540400	PEBBLE BEACH 5655	S003S035W22	40
ADL 540401	PEBBLE BEACH 5755	S003S035W22	40
ADL 540402	PEBBLE BEACH 5855	S003S035W15	40
ADL 540403	PEBBLE BEACH 5955	S003S035W15	40
ADL 540404	PEBBLE BEACH 6055	S003S035W15	40
ADL 540405	PEBBLE BEACH 6155	S003S035W15	40
ADL 540406	PEBBLE BEACH 6255	S003S035W10	40
ADL 540407	PEBBLE BEACH 6355	S003S035W10	40
ADL 540408	PEBBLE BEACH 6448	S003S035W08	40
ADL 540409	PEBBLE BEACH 6449	S003S035W08	40
ADL 540410	PEBBLE BEACH 6450	S003S035W09	40
ADL 540411	PEBBLE BEACH 6451	S003S035W09	40
ADL 540412	PEBBLE BEACH 6452	S003S035W09	40
ADL 540413	PEBBLE BEACH 6453	S003S035W09	40
ADL 540414	PEBBLE BEACH 6454	S003S035W10	40
ADL 540415	PEBBLE BEACH 6455	S003S035W10	40
ADL 540416	PEBBLE BEACH 6548	S003S035W08	40
ADL 540417	PEBBLE BEACH 6549	S003S035W08	40
ADL 540418	PEBBLE BEACH 6550	S003S035W09	40
ADL 540419	PEBBLE BEACH 6551	S003S035W09	40
ADL 540420	PEBBLE BEACH 6552	S003S035W09	40
ADL 540421	PEBBLE BEACH 6553	S003S035W09	40
ADL 540422	PEBBLE BEACH 6554	S003S035W10	40
ADL 540423	PEBBLE BEACH 6555	S003S035W10	40
ADL 540424	SILL 7643	S003S035W22	40
ADL 540425	SILL 7644	S003S035W22	40
ADL 540426	SILL 7645	S003S035W23	40
ADL 540427	SILL 7646	S003S035W23	40
ADL 540428	SILL 7647	S003S035W23	40
ADL 540429	SILL 7648	S003S035W23	40
ADL 540430	SILL 7743	S003S035W22	40
ADL 540431	SILL 7744	S003S035W22	40
ADL 540432	SILL 7745	S003S035W23	40
ADL 540433	SILL 7746	S003S035W23	40
ADL 540434	SILL 7747	S003S035W23	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 540435	SILL 7748	S003S035W23	40
ADL 540436	SILL 7843	S003S035W22	40
ADL 540437	SILL 7844	S003S035W22	40
ADL 540438	SILL 7845	S003S035W23	40
ADL 540439	SILL 7846	S003S035W23	40
ADL 540440	SILL 7847	S003S035W23	40
ADL 540441	SILL 7848	S003S035W23	40
ADL 540442	SILL 7943	S003S035W15	40
ADL 540443	SILL 7944	S003S035W15	40
ADL 540444	SILL 7945	S003S035W14	40
ADL 540445	SILL 7946	S003S035W14	40
ADL 540446	SILL 7947	S003S035W14	40
ADL 540447	SILL 7948	S003S035W14	40
ADL 540448	SILL 8043	S003S035W15	40
ADL 540449	SILL 8044	S003S035W15	40
ADL 540450	SILL 8045	S003S035W14	40
ADL 540451	SILL 8046	S003S035W14	40
ADL 540452	SILL 8047	S003S035W14	40
ADL 540453	SILL 8048	S003S035W14	40
ADL 540454	SILL 8143	S003S035W15	40
ADL 540455	SILL 8144	S003S035W15	40
ADL 540456	SILL 8145	S003S035W14	40
ADL 540457	SILL 8146	S003S035W14	40
ADL 540458	SILL 8147	S003S035W14	40
ADL 540459	SILL 8148	S003S035W14	40
ADL 540460	SILL 8243	S003S035W15	40
ADL 540461	SILL 8244	S003S035W15	40
ADL 540462	SILL 8245	S003S035W14	40
ADL 540463	SILL 8246	S003S035W14	40
ADL 540464	SILL 8247	S003S035W14	40
ADL 540465	SILL 8248	S003S035W14	40
ADL 540466	SILL 8343	S003S035W10	40
ADL 540467	SILL 8344	S003S035W10	40
ADL 540468	SILL 8443	S003S035W10	40
ADL 540469	SILL 8444	S003S035W10	40
ADL 540470	SILL 8543	S003S035W10	40
ADL 540471	SILL 8544	S003S035W10	40
ADL 540472	SILL 8643	S003S035W10	40
ADL 540473	SILL 8644	S003S035W10	40
ADL 541245	PB 113	S004S035W18	40
ADL 541246	PB 114	S004S035W18	40
ADL 541247	PB 115	S004S035W18	40
ADL 541248	PB 116	S004S035W18	40
ADL 541249	PB 117	S004S035W18	40
ADL 541250	PB 118	S004S035W18	40
ADL 541251	PB 119	S004S035W18	40
ADL 541252	PB 120	S004S035W18	40
ADL 542561	PEBBLE BEACH 4856	S003S035W34	4
ADL 542562	PEBBLE BEACH 4956	S003S035W34	4
ADL 542563	PEBBLE BEACH 5056	S003S035W27	4
ADL 542564	PEBBLE BEACH 5156	S003S035W27	4
ADL 542565	PEBBLE BEACH 5256	S003S035W27	4
ADL 542566	PEBBLE BEACH 5356	S003S035W27	4
ADL 542567	PEBBLE BEACH 5456	S003S035W22	4

ADL No.	Claim Name	MTRS	Total Acres
ADL 542568	PEBBLE BEACH 5556	S003S035W22	4
ADL 542569	PEBBLE BEACH 5656	S003S035W22	4
ADL 542570	PEBBLE BEACH 5756	S003S035W22	4
ADL 542571	PEBBLE BEACH 5856	S003S035W15	4
ADL 542572	PEBBLE BEACH 5956	S003S035W15	4
ADL 542573	PEBBLE BEACH 6056	S003S035W15	4
ADL 542574	PEBBLE BEACH 6156	S003S035W15	4
ADL 542575	PEBBLE BEACH 6256	S003S035W10	4
ADL 542576	PEBBLE BEACH 6356	S003S035W10	4
ADL 542577	PEBBLE BEACH 6456	S003S035W10	4
ADL 542578	PEBBLE BEACH 6556	S003S035W10	4
ADL 542579	PEBBLE BEACH 4642	S003S035W31	40
ADL 542580	PEBBLE BEACH 4643	S003S035W31	40
ADL 542581	PEBBLE BEACH 4742	S003S035W31	40
ADL 542582	PEBBLE BEACH 4743	S003S035W31	40
ADL 542583	PEBBLE BEACH 4842	S003S035W31	40
ADL 542584	PEBBLE BEACH 4843	S003S035W31	40
ADL 542585	PEBBLE BEACH 4942	S003S035W31	40
ADL 542586	PEBBLE BEACH 4943	S003S035W31	40
ADL 542587	PEBBLE BEACH 5042	S003S035W30	40
ADL 542588	PEBBLE BEACH 5043	S003S035W30	40
ADL 542589	PEBBLE BEACH 5142	S003S035W30	40
ADL 542590	PEBBLE BEACH 5143	S003S035W30	40
ADL 542591	PEBBLE BEACH 5242	S003S035W30	40
ADL 542592	PEBBLE BEACH 5243	S003S035W30	40
ADL 542593	PEBBLE BEACH 5342	S003S035W30	40
ADL 542594	PEBBLE BEACH 5343	S003S035W30	40
ADL 542595	PEBBLE BEACH 5442	S003S035W19	40
ADL 542596	PEBBLE BEACH 5443	S003S035W19	40
ADL 542597	PEBBLE BEACH 5542	S003S035W19	40
ADL 542598	PEBBLE BEACH 5543	S003S035W19	40
ADL 542599	PEBBLE BEACH 5642	S003S035W19	40
ADL 542600	PEBBLE BEACH 5643	S003S035W19	40
ADL 542601	PEBBLE BEACH 5742	S003S035W19	40
ADL 542602	PEBBLE BEACH 5743	S003S035W19	40
ADL 542603	PEBBLE BEACH 5842	S003S035W18	40
ADL 542604	PEBBLE BEACH 5843	S003S035W18	40
ADL 552917	SOUTH PEBBLE 159	S005S035W18	160
ADL 552918	SOUTH PEBBLE 160	S005S035W18	160
ADL 552919	SOUTH PEBBLE 161	S005S035W17	160
ADL 552920	SOUTH PEBBLE 162	S005S035W17	160
ADL 552921	SOUTH PEBBLE 163	S005S035W17	160
ADL 552922	SOUTH PEBBLE 164	S005S035W17	160
ADL 552923	SOUTH PEBBLE 165	S005S035W08	160
ADL 552924	SOUTH PEBBLE 166	S005S035W08	160
ADL 552925	SOUTH PEBBLE 167	S005S035W08	160
ADL 552926	SOUTH PEBBLE 168	S005S035W08	160
ADL 552927	SOUTH PEBBLE 169	S005S035W05	160
ADL 552928	SOUTH PEBBLE 170	S005S035W05	160
ADL 552929	SOUTH PEBBLE 171	S005S035W05	160
ADL 552930	SOUTH PEBBLE 172	S005S035W05	160
ADL 566247	PEBBLE BEACH 1936	S005S036W04	40
ADL 566248	PEBBLE BEACH 1937	S005S036W04	40
ADL 566249	PEBBLE BEACH 1938	S005S036W03	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 566250	PEBBLE BEACH 1939	S005S036W03	40
ADL 566251	PEBBLE BEACH 1940	S005S036W03	40
ADL 566252	PEBBLE BEACH 1941	S005S036W03	40
ADL 566287	PEBBLE BEACH 2036	S005S036W04	40
ADL 566288	PEBBLE BEACH 2037	S005S036W04	40
ADL 566289	PEBBLE BEACH 2038	S005S036W03	40
ADL 566290	PEBBLE BEACH 2039	S005S036W03	40
ADL 566291	PEBBLE BEACH 2040	S005S036W03	40
ADL 566292	PEBBLE BEACH 2041	S005S036W03	40
ADL 566327	PEBBLE BEACH 2136	S005S036W04	40
ADL 566328	PEBBLE BEACH 2137	S005S036W04	40
ADL 566329	PEBBLE BEACH 2138	S005S036W03	40
ADL 566330	PEBBLE BEACH 2139	S005S036W03	40
ADL 566331	PEBBLE BEACH 2140	S005S036W03	40
ADL 566332	PEBBLE BEACH 2141	S005S036W03	40
ADL 566367	PEBBLE BEACH 2236	S004S036W35	40
ADL 566368	PEBBLE BEACH 2237	S004S036W35	40
ADL 566369	PEBBLE BEACH 2238	S004S036W36	40
ADL 566370	PEBBLE BEACH 2239	S004S036W36	40
ADL 566371	PEBBLE BEACH 2240	S004S036W36	40
ADL 566372	PEBBLE BEACH 2241	S004S036W36	40
ADL 566373	PEBBLE BEACH 2242	S004S035W31	40
ADL 566407	PEBBLE BEACH 2336	S004S036W35	40
ADL 566408	PEBBLE BEACH 2337	S004S036W35	40
ADL 566409	PEBBLE BEACH 2338	S004S036W36	40
ADL 566410	PEBBLE BEACH 2339	S004S036W36	40
ADL 566411	PEBBLE BEACH 2340	S004S036W36	40
ADL 566412	PEBBLE BEACH 2341	S004S036W36	40
ADL 566413	PEBBLE BEACH 2342	S004S035W31	40
ADL 566447	PEBBLE BEACH 2436	S004S036W35	40
ADL 566448	PEBBLE BEACH 2437	S004S036W35	40
ADL 566449	PEBBLE BEACH 2438	S004S036W36	40
ADL 566450	PEBBLE BEACH 2439	S004S036W36	40
ADL 566451	PEBBLE BEACH 2440	S004S036W36	40
ADL 566452	PEBBLE BEACH 2441	S004S036W36	40
ADL 566453	PEBBLE BEACH 2442	S004S035W31	40
ADL 566487	PEBBLE BEACH 2536	S004S036W35	40
ADL 566488	PEBBLE BEACH 2537	S004S036W35	40
ADL 566489	PEBBLE BEACH 2538	S004S036W36	40
ADL 566490	PEBBLE BEACH 2539	S004S036W36	40
ADL 566491	PEBBLE BEACH 2540	S004S036W36	40
ADL 566492	PEBBLE BEACH 2541	S004S036W36	40
ADL 566527	PEBBLE BEACH 2636	S004S036W26	40
ADL 566528	PEBBLE BEACH 2637	S004S036W26	40
ADL 566529	PEBBLE BEACH 2638	S004S036W25	40
ADL 566530	PEBBLE BEACH 2639	S004S036W25	40
ADL 566531	PEBBLE BEACH 2640	S004S036W25	40
ADL 566532	PEBBLE BEACH 2641	S004S036W25	40
ADL 566567	PEBBLE BEACH 2736	S004S036W26	40
ADL 566568	PEBBLE BEACH 2737	S004S036W26	40
ADL 566569	PEBBLE BEACH 2738	S004S036W25	40
ADL 566570	PEBBLE BEACH 2739	S004S036W25	40
ADL 566571	PEBBLE BEACH 2740	S004S036W25	40
ADL 566572	PEBBLE BEACH 2741	S004S036W25	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 566607	PEBBLE BEACH 3138	S004S036W24	40
ADL 566608	PEBBLE BEACH 3139	S004S036W24	40
ADL 566609	PEBBLE BEACH 3140	S004S036W24	40
ADL 566610	PEBBLE BEACH 3141	S004S036W24	40
ADL 566637	PEBBLE BEACH 2938	S004S036W25	40
ADL 566638	PEBBLE BEACH 2939	S004S036W25	40
ADL 566639	PEBBLE BEACH 2940	S004S036W25	40
ADL 566640	PEBBLE BEACH 2941	S004S036W25	40
ADL 566655	PEBBLE BEACH 2836	S004S036W26	40
ADL 566656	PEBBLE BEACH 2837	S004S036W26	40
ADL 566657	PEBBLE BEACH 2838	S004S036W25	40
ADL 566658	PEBBLE BEACH 2839	S004S036W25	40
ADL 566659	PEBBLE BEACH 2840	S004S036W25	40
ADL 566660	PEBBLE BEACH 2841	S004S036W25	40
ADL 566697	PEBBLE BEACH 3238	S004S036W24	40
ADL 566698	PEBBLE BEACH 3239	S004S036W24	40
ADL 566699	PEBBLE BEACH 3240	S004S036W24	40
ADL 566700	PEBBLE BEACH 3241	S004S036W24	40
ADL 566701	PEBBLE BEACH 3242	S004S035W19	40
ADL 566737	PEBBLE BEACH 3038	S004S036W24	40
ADL 566738	PEBBLE BEACH 3039	S004S036W24	40
ADL 566739	PEBBLE BEACH 3040	S004S036W24	40
ADL 566740	PEBBLE BEACH 3041	S004S036W24	40
ADL 566751	PEBBLE BEACH 3252	S004S035W21	40
ADL 566752	PEBBLE BEACH 3253	S004S035W21	40
ADL 566753	PEBBLE BEACH 3254	S004S035W22	40
ADL 566754	PEBBLE BEACH 3255	S004S035W22	40
ADL 566767	PEBBLE BEACH 3338	S004S036W24	40
ADL 566768	PEBBLE BEACH 3339	S004S036W24	40
ADL 566769	PEBBLE BEACH 3340	S004S036W24	40
ADL 566770	PEBBLE BEACH 3341	S004S036W24	40
ADL 566771	PEBBLE BEACH 3342	S004S035W19	40
ADL 566781	PEBBLE BEACH 3352	S004S035W21	40
ADL 566782	PEBBLE BEACH 3353	S004S035W21	40
ADL 566783	PEBBLE BEACH 3354	S004S035W22	40
ADL 566784	PEBBLE BEACH 3355	S004S035W22	40
ADL 566793	PEBBLE BEACH 3438	S004S036W13	40
ADL 566794	PEBBLE BEACH 3439	S004S036W13	40
ADL 566795	PEBBLE BEACH 3440	S004S036W13	40
ADL 566796	PEBBLE BEACH 3441	S004S036W13	40
ADL 566797	PEBBLE BEACH 3446	S004S035W17	40
ADL 566798	PEBBLE BEACH 3447	S004S035W17	40
ADL 566799	PEBBLE BEACH 3448	S004S035W17	40
ADL 566800	PEBBLE BEACH 3449	S004S035W17	40
ADL 566801	PEBBLE BEACH 3450	S004S035W16	40
ADL 566802	PEBBLE BEACH 3451	S004S035W16	40
ADL 566811	PEBBLE BEACH 3538	S004S036W13	40
ADL 566812	PEBBLE BEACH 3539	S004S036W13	40
ADL 566813	PEBBLE BEACH 3540	S004S036W13	40
ADL 566814	PEBBLE BEACH 3541	S004S036W13	40
ADL 566815	PEBBLE BEACH 3546	S004S035W17	40
ADL 566816	PEBBLE BEACH 3547	S004S035W17	40
ADL 566817	PEBBLE BEACH 3548	S004S035W17	40
ADL 566818	PEBBLE BEACH 3549	S004S035W17	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 566819	PEBBLE BEACH 3550	S004S035W16	40
ADL 566820	PEBBLE BEACH 3551	S004S035W16	40
ADL 566829	PEBBLE BEACH 3638	S004S036W13	40
ADL 566830	PEBBLE BEACH 3639	S004S036W13	40
ADL 566831	PEBBLE BEACH 3640	S004S036W13	40
ADL 566832	PEBBLE BEACH 3641	S004S036W13	40
ADL 566833	PEBBLE BEACH 3646	S004S035W17	40
ADL 566834	PEBBLE BEACH 3647	S004S035W17	40
ADL 566835	PEBBLE BEACH 3648	S004S035W17	40
ADL 566836	PEBBLE BEACH 3649	S004S035W17	40
ADL 566837	PEBBLE BEACH 3650	S004S035W16	40
ADL 566838	PEBBLE BEACH 3651	S004S035W16	40
ADL 566847	PEBBLE BEACH 3738	S004S036W13	40
ADL 566848	PEBBLE BEACH 3739	S004S036W13	40
ADL 566849	PEBBLE BEACH 3740	S004S036W13	40
ADL 566850	PEBBLE BEACH 3741	S004S036W13	40
ADL 566851	PEBBLE BEACH 3746	S004S035W17	40
ADL 566852	PEBBLE BEACH 3747	S004S035W17	40
ADL 566853	PEBBLE BEACH 3748	S004S035W17	40
ADL 566854	PEBBLE BEACH 3749	S004S035W17	40
ADL 566855	PEBBLE BEACH 3750	S004S035W16	40
ADL 566856	PEBBLE BEACH 3751	S004S035W16	40
ADL 566865	PEBBLE BEACH 3838	S004S036W12	40
ADL 566866	PEBBLE BEACH 3839	S004S036W12	40
ADL 566867	PEBBLE BEACH 3840	S004S036W12	40
ADL 566868	PEBBLE BEACH 3841	S004S036W12	40
ADL 566877	PEBBLE BEACH 3938	S004S036W12	40
ADL 566878	PEBBLE BEACH 3939	S004S036W12	40
ADL 566879	PEBBLE BEACH 3940	S004S036W12	40
ADL 566880	PEBBLE BEACH 3941	S004S036W12	40
ADL 566889	PEBBLE BEACH 4038	S004S036W12	40
ADL 566890	PEBBLE BEACH 4039	S004S036W12	40
ADL 566891	PEBBLE BEACH 4040	S004S036W12	40
ADL 566892	PEBBLE BEACH 4041	S004S036W12	40
ADL 566901	PEBBLE BEACH 4138	S004S036W12	40
ADL 566902	PEBBLE BEACH 4139	S004S036W12	40
ADL 566903	PEBBLE BEACH 4140	S004S036W12	40
ADL 566904	PEBBLE BEACH 4141	S004S036W12	40
ADL 566905	PEBBLE BEACH 4238	S004S036W01	40
ADL 566906	PEBBLE BEACH 4239	S004S036W01	40
ADL 566907	PEBBLE BEACH 4240	S004S036W01	40
ADL 566908	PEBBLE BEACH 4241	S004S036W01	40
ADL 566909	PEBBLE BEACH 4242	S004S035W06	40
ADL 566910	PEBBLE BEACH 4243	S004S035W06	40
ADL 566911	PEBBLE BEACH 4338	S004S036W01	40
ADL 566912	PEBBLE BEACH 4339	S004S036W01	40
ADL 566913	PEBBLE BEACH 4340	S004S036W01	40
ADL 566914	PEBBLE BEACH 4341	S004S036W01	40
ADL 566915	PEBBLE BEACH 4342	S004S035W06	40
ADL 566916	PEBBLE BEACH 4343	S004S035W06	40
ADL 566917	PEBBLE BEACH 4438	S004S036W01	40
ADL 566918	PEBBLE BEACH 4439	S004S036W01	40
ADL 566919	PEBBLE BEACH 4440	S004S036W01	40
ADL 566920	PEBBLE BEACH 4441	S004S036W01	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 566921	PEBBLE BEACH 4442	S004S035W06	40
ADL 566922	PEBBLE BEACH 4443	S004S035W06	40
ADL 566923	PEBBLE BEACH 4538	S004S036W01	40
ADL 566924	PEBBLE BEACH 4539	S004S036W01	40
ADL 566925	PEBBLE BEACH 4540	S004S036W01	40
ADL 566926	PEBBLE BEACH 4541	S004S036W01	40
ADL 566927	PEBBLE BEACH 4542	S004S035W06	40
ADL 566928	PEBBLE BEACH 4543	S004S035W06	40
ADL 566929	PEBBLE BEACH 4638	S003S036W36	40
ADL 566930	PEBBLE BEACH 4639	S003S036W36	40
ADL 566931	PEBBLE BEACH 4640	S003S036W36	40
ADL 566932	PEBBLE BEACH 4641	S003S036W36	40
ADL 566933	PEBBLE BEACH 4738	S003S036W36	40
ADL 566934	PEBBLE BEACH 4739	S003S036W36	40
ADL 566935	PEBBLE BEACH 4740	S003S036W36	40
ADL 566936	PEBBLE BEACH 4741	S003S036W36	40
ADL 566937	PEBBLE BEACH 4838	S003S036W36	40
ADL 566938	PEBBLE BEACH 4839	S003S036W36	40
ADL 566939	PEBBLE BEACH 4840	S003S036W36	40
ADL 566940	PEBBLE BEACH 4841	S003S036W36	40
ADL 566941	PEBBLE BEACH 4938	S003S036W36	40
ADL 566942	PEBBLE BEACH 4939	S003S036W36	40
ADL 566943	PEBBLE BEACH 4940	S003S036W36	40
ADL 566944	PEBBLE BEACH 4941	S003S036W36	40
ADL 566945	PEBBLE BEACH 5038	S003S036W25	40
ADL 566946	PEBBLE BEACH 5039	S003S036W25	40
ADL 566947	PEBBLE BEACH 5040	S003S036W25	40
ADL No.	Claim Name	MTRS	Total Acres
ADL 516769	SILL 5951	S004S035W12	40
ADL 516770	SILL 5952	S004S035W12	40
ADL 516779	SILL 6051	S004S035W12	40
ADL 516780	SILL 6052	S004S035W12	40
ADL 516789	SILL 6151	S004S035W12	40
ADL 516790	SILL 6152	S004S035W12	40
ADL 516797	SILL 6247	S004S035W11	40
ADL 516798	SILL 6248	S004S035W11	40
ADL 516799	SILL 6249	S004S035W12	40
ADL 516800	SILL 6250	S004S035W12	40
ADL 516801	SILL 6251	S004S035W12	40
ADL 516802	SILL 6252	S004S035W12	40
ADL 516806	PEBBLE BEACH 5448	S003S035W20	40
ADL 516807	PEBBLE BEACH 5449	S003S035W20	40
ADL 516808	PEBBLE BEACH 5450	S003S035W21	40
ADL 516809	PEBBLE BEACH 5451	S003S035W21	40
ADL 516810	PEBBLE BEACH 5452	S003S035W21	40
ADL 516811	PEBBLE BEACH 5453	S003S035W21	40
ADL 516812	PEBBLE BEACH 5454	S003S035W22	40
ADL 516813	PEBBLE BEACH 5548	S003S035W20	40
ADL 516814	PEBBLE BEACH 5549	S003S035W20	40
ADL 516815	PEBBLE BEACH 5550	S003S035W21	40
ADL 516816	PEBBLE BEACH 5551	S003S035W21	40
ADL 516817	PEBBLE BEACH 5552	S003S035W21	40
ADL 516818	PEBBLE BEACH 5553	S003S035W21	40
ADL 516819	PEBBLE BEACH 5554	S003S035W22	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 566975	PEBBLE BEACH 5740	S003S036W24	40
ADL 566976	PEBBLE BEACH 5741	S003S036W24	40
ADL 566977	PEBBLE BEACH 5838	S003S036W13	40
ADL 566978	PEBBLE BEACH 5839	S003S036W13	40
ADL 566979	PEBBLE BEACH 5840	S003S036W13	40
ADL 566980	PEBBLE BEACH 5841	S003S036W13	40
ADL 566981	PEBBLE BEACH 5938	S003S036W13	40
ADL 566982	PEBBLE BEACH 5939	S003S036W13	40
ADL 566983	PEBBLE BEACH 5940	S003S036W13	40
ADL 566984	PEBBLE BEACH 5941	S003S036W13	40
ADL 566985	PEBBLE BEACH 6038	S003S036W13	40
ADL 566986	PEBBLE BEACH 6039	S003S036W13	40
ADL 566987	PEBBLE BEACH 6040	S003S036W13	40
ADL 566988	PEBBLE BEACH 6041	S003S036W13	40
ADL 566989	PEBBLE BEACH 6042	S003S035W18	40
ADL 566990	PEBBLE BEACH 6043	S003S035W18	40
ADL 566991	PEBBLE BEACH 6138	S003S036W13	40
ADL 566992	PEBBLE BEACH 6139	S003S036W13	40
ADL 566993	PEBBLE BEACH 6140	S003S036W13	40
ADL 566994	PEBBLE BEACH 6141	S003S036W13	40
ADL 566995	PEBBLE BEACH 6142	S003S035W18	40
ADL 566996	PEBBLE BEACH 6143	S003S035W18	40
ADL 566997	PEBBLE BEACH 6238	S003S036W12	40
ADL 566998	PEBBLE BEACH 6239	S003S036W12	40
ADL 566999	PEBBLE BEACH 6240	S003S036W12	40
ADL 567000	PEBBLE BEACH 6241	S003S036W12	40
ADL 567001	PEBBLE BEACH 6242	S003S035W07	40
ADL 567002	PEBBLE BEACH 6243	S003S035W07	40
ADL 567003	PEBBLE BEACH 6244	S003S035W07	40
ADL 567004	PEBBLE BEACH 6245	S003S035W07	40
ADL 567005	PEBBLE BEACH 6246	S003S035W08	40
ADL 567006	PEBBLE BEACH 6247	S003S035W08	40
ADL 567007	PEBBLE BEACH 6338	S003S036W12	40
ADL 567008	PEBBLE BEACH 6339	S003S036W12	40
ADL 567009	PEBBLE BEACH 6340	S003S036W12	40
ADL 567010	PEBBLE BEACH 6341	S003S036W12	40
ADL 567011	PEBBLE BEACH 6342	S003S035W07	40
ADL 567012	PEBBLE BEACH 6343	S003S035W07	40
ADL 567013	PEBBLE BEACH 6344	S003S035W07	40
ADL 567014	PEBBLE BEACH 6345	S003S035W07	40
ADL 567015	PEBBLE BEACH 6346	S003S035W08	40
ADL 567016	PEBBLE BEACH 6347	S003S035W08	40
ADL 567017	PEBBLE BEACH 6438	S003S036W12	40
ADL 567018	PEBBLE BEACH 6439	S003S036W12	40
ADL 567019	PEBBLE BEACH 6440	S003S036W12	40
ADL 567020	PEBBLE BEACH 6441	S003S036W12	40
ADL 567021	PEBBLE BEACH 6442	S003S035W07	40
ADL 567022	PEBBLE BEACH 6443	S003S035W07	40
ADL 567023	PEBBLE BEACH 6444	S003S035W07	40
ADL 567024	PEBBLE BEACH 6445	S003S035W07	40
ADL 567025	PEBBLE BEACH 6446	S003S035W08	40
ADL 567026	PEBBLE BEACH 6447	S003S035W08	40
ADL 567035	PEBBLE BEACH 6546	S003S035W08	40
ADL 567036	PEBBLE BEACH 6547	S003S035W08	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 567045	PEBBLE BEACH 6646	S003S035W05	40
ADL 567046	PEBBLE BEACH 6647	S003S035W05	40
ADL 567047	PEBBLE BEACH 6648	S003S035W05	40
ADL 567048	PEBBLE BEACH 6649	S003S035W05	40
ADL 567049	PEBBLE BEACH 6650	S003S035W04	40
ADL 567050	PEBBLE BEACH 6651	S003S035W04	40
ADL 567051	PEBBLE BEACH 6652	S003S035W04	40
ADL 567052	PEBBLE BEACH 6653	S003S035W04	40
ADL 567053	PEBBLE BEACH 6654	S003S035W03	40
ADL 567054	PEBBLE BEACH 6655	S003S035W03	40
ADL 567055	PEBBLE BEACH 6656	S003S035W03	4
ADL 567064	PEBBLE BEACH 6746	S003S035W05	40
ADL 567065	PEBBLE BEACH 6747	S003S035W05	40
ADL 567066	PEBBLE BEACH 6748	S003S035W05	40
ADL 567067	PEBBLE BEACH 6749	S003S035W05	40
ADL 567068	PEBBLE BEACH 6750	S003S035W04	40
ADL 567069	PEBBLE BEACH 6751	S003S035W04	40
ADL 567083	PEBBLE BEACH 6846	S003S035W05	40
ADL 567084	PEBBLE BEACH 6847	S003S035W05	40
ADL 567085	PEBBLE BEACH 6848	S003S035W05	40
ADL 567086	PEBBLE BEACH 6849	S003S035W05	40
ADL 567087	PEBBLE BEACH 6850	S003S035W04	40
ADL 567088	PEBBLE BEACH 6851	S003S035W04	40
ADL 567102	PEBBLE BEACH 6946	S003S035W05	40
ADL 567103	PEBBLE BEACH 6947	S003S035W05	40
ADL 567104	PEBBLE BEACH 6948	S003S035W05	40
ADL 567105	PEBBLE BEACH 6949	S003S035W05	40
ADL 567106	PEBBLE BEACH 6950	S003S035W04	40
ADL 567107	PEBBLE BEACH 6951	S003S035W04	40
ADL 567841	SILL 5343	S004S035W22	40
ADL 567842	SILL 5344	S004S035W22	40
ADL 567843	SILL 5345	S004S035W23	40
ADL 567844	SILL 5346	S004S035W23	40
ADL 567845	SILL 5347	S004S035W23	40
ADL 567855	SILL 5443	S004S035W22	40
ADL 567856	SILL 5444	S004S035W22	40
ADL 567857	SILL 5445	S004S035W23	40
ADL 567858	SILL 5446	S004S035W23	40
ADL 567859	SILL 5447	S004S035W23	40
ADL 567860	SILL 5448	S004S035W23	40
ADL 567869	SILL 5545	S004S035W14	40
ADL 567870	SILL 5546	S004S035W14	40
ADL 567871	SILL 5547	S004S035W14	40
ADL 567872	SILL 5548	S004S035W14	40
ADL 567873	SILL 5549	S004S035W13	40
ADL 567881	SILL 5645	S004S035W14	40
ADL 567882	SILL 5646	S004S035W14	40
ADL 567883	SILL 5647	S004S035W14	40
ADL 567884	SILL 5648	S004S035W14	40
ADL 567885	SILL 5649	S004S035W13	40
ADL 567886	SILL 5650	S004S035W13	40
ADL 567893	SILL 5745	S004S035W14	40
ADL 567894	SILL 5746	S004S035W14	40
ADL 567895	SILL 5747	S004S035W14	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 567896	SILL 5748	S004S035W14	40
ADL 567897	SILL 5749	S004S035W13	40
ADL 567898	SILL 5750	S004S035W13	40
ADL 567905	SILL 5845	S004S035W14	40
ADL 567906	SILL 5846	S004S035W14	40
ADL 567907	SILL 5847	S004S035W14	40
ADL 567908	SILL 5848	S004S035W14	40
ADL 567909	SILL 5849	S004S035W13	40
ADL 567910	SILL 5850	S004S035W13	40
ADL 567911	SILL 5851	S004S035W13	40
ADL 567917	SILL 5945	S004S035W11	40
ADL 567918	SILL 5946	S004S035W11	40
ADL 567919	SILL 5947	S004S035W11	40
ADL 567920	SILL 5948	S004S035W11	40
ADL 567921	SILL 5949	S004S035W12	40
ADL 567922	SILL 5950	S004S035W12	40
ADL 567923	SILL 5953	S004S034W07	40
ADL 567927	SILL 6045	S004S035W11	40
ADL 567928	SILL 6046	S004S035W11	40
ADL 567929	SILL 6047	S004S035W11	40
ADL 567930	SILL 6048	S004S035W11	40
ADL 567931	SILL 6049	S004S035W12	40
ADL 567932	SILL 6050	S004S035W12	40
ADL 567933	SILL 6053	S004S034W07	40
ADL 567937	SILL 6145	S004S035W11	40
ADL 567938	SILL 6146	S004S035W11	40
ADL 567939	SILL 6147	S004S035W11	40
ADL 567940	SILL 6148	S004S035W11	40
ADL 567941	SILL 6149	S004S035W12	40
ADL 567942	SILL 6150	S004S035W12	40
ADL 567943	SILL 6153	S004S034W07	40
ADL 567944	SILL 6154	S004S034W07	40
ADL 567947	SILL 6253	S004S034W07	40
ADL 567948	SILL 6254	S004S034W07	40
ADL 567949	SILL 6255	S004S034W07	40
ADL 567951	SILL 6345	S004S035W02	40
ADL 567952	SILL 6346	S004S035W02	40
ADL 567953	SILL 6347	S004S035W02	40
ADL 567954	SILL 6348	S004S035W02	40
ADL 567955	SILL 6349	S004S035W01	40
ADL 567956	SILL 6350	S004S035W01	40
ADL 567957	SILL 6353	S004S034W06	40
ADL 567958	SILL 6354	S004S034W06	40
ADL 567959	SILL 6355	S004S034W06	40
ADL 567960	SILL 6356	S004S034W06	40
ADL 567961	SILL 6445	S004S035W02	40
ADL 567962	SILL 6446	S004S035W02	40
ADL 567963	SILL 6447	S004S035W02	40
ADL 567964	SILL 6448	S004S035W02	40
ADL 567965	SILL 6449	S004S035W01	40
ADL 567966	SILL 6450	S004S035W01	40
ADL 567967	SILL 6453	S004S034W06	40
ADL 567968	SILL 6454	S004S034W06	40
ADL 567969	SILL 6455	S004S034W06	40

ADL No.	Claim Name	MTRS	Total Acres
ADL 567970	SILL 6456	S004S034W06	40
ADL 567971	SILL 6545	S004S035W02	40
ADL 567972	SILL 6546	S004S035W02	40
ADL 567973	SILL 6547	S004S035W02	40
ADL 567974	SILL 6548	S004S035W02	40
ADL 567975	SILL 6549	S004S035W01	40
ADL 567976	SILL 6550	S004S035W01	40
ADL 567977	SILL 6551	S004S035W01	40
ADL 567978	SILL 6552	S004S035W01	40
ADL 567979	SILL 6553	S004S034W06	40
ADL 567980	SILL 6554	S004S034W06	40
ADL 567981	SILL 6555	S004S034W06	40
ADL 567982	SILL 6556	S004S034W06	40
ADL 568175	SILL 8345	S003S035W11	40
ADL 568176	SILL 8346	S003S035W11	40
ADL 568177	SILL 8347	S003S035W11	40
ADL 568178	SILL 8348	S003S035W11	40
ADL 568255	SILL 8743	S003S035W03	40
ADL 568256	SILL 8744	S003S035W03	40
ADL 644284	SP 173	S005S035W09	160
ADL 644285	SP 174	S005S035W09	160
ADL 644286	SP 175	S005S035W09	160
ADL 644287	SP 176	S005S035W09	160
ADL 644288	SP 177	S005S035W03	160
ADL 644289	SP 178	S005S035W03	160
ADL 644290	SP 179	S005S035W04	160
ADL 644291	SP 180	S005S035W04	160
ADL 644292	SP 181	S005S035W04	160
ADL 644293	SP 182	S005S035W04	160
ADL 644294	SP 183	S005S035W03	160
ADL 644295	SP 184	S005S035W03	160
ADL 644296	SP 185	S004S035W36	160
ADL 644297	SP 186	S004S035W36	160
ADL 644298	SP 187	S004S035W35	160
ADL 644299	SP 188	S004S035W35	160
ADL 644300	SP 189	S004S035W35	160
ADL 644301	SP 190	S004S035W36	160
ADL 644302	SP 191	S005S035W07	160
ADL 644303	SP 192	S005S035W07	160
ADL 644312	SP 201	S005S035W07	160
ADL 644313	SP 202	S005S035W07	160
ADL 644314	SP 203	S005S035W18	160
ADL 644315	SP 204	S005S035W18	160
ADL 644318	SP 207	S004S035W36	160
ADL 644319	SP 208	S004S035W25	160
ADL 644320	SP 209	S004S035W25	160
ADL 644321	SP 210	S004S035W25	160
ADL 644322	SP 216	S004S035W25	160
ADL 644323	SP 225	S004S035W24	160
ADL 644324	SP 226	S004S035W24	160
ADL 644325	SP 227	S004S034W19	160
ADL 644326	SP 228	S004S034W19	160
ADL 644327	SP 229	S004S034W19	160
ADL 644328	SP 230	S004S034W19	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 644329	SP 231	S004S035W24	160
ADL 644330	SP 232	S004S035W24	160
ADL 644331	SP 235	S004S035W13	160
ADL 644332	SP 236	S004S034W18	160
ADL 644333	SP 237	S004S034W18	160
ADL 644334	SP 238	S004S034W18	160
ADL 644335	SP 239	S004S034W18	160
ADL 644336	SP 245	S004S034W07	160
ADL 644733	SOUTH PEBBLE 234	S004S035W13	40
ADL 644734	SOUTH PEBBLE 240	S004S035W13	40
ADL 644735	SOUTH PEBBLE 241	S004S035W13	40
ADL 644736	SOUTH PEBBLE 242	S004S035W13	40
ADL 644737	SOUTH PEBBLE 243	S004S034W07	40
ADL 644738	SOUTH PEBBLE 244	S004S034W07	40
ADL 645612	SP 322	S004S034W08	160
ADL 645613	SP 323	S004S034W08	160
ADL 645614	SP 324	S004S034W05	160
ADL 645615	SP 325	S004S034W05	160
ADL 645616	SP 326	S004S034W05	160
ADL 645617	SP 327	S004S034W04	160
ADL 645618	SP 328	S004S034W04	160
ADL 645619	SP 329	S004S034W03	160
ADL 645620	SP 330	S004S034W03	160
ADL 645621	SP 331	S003S034W35	160
ADL 645622	SP 332	S003S034W34	160
ADL 645623	SP 333	S003S034W34	160
ADL 645624	SP 334	S003S034W34	160
ADL 645625	SP 335	S003S034W34	160
ADL 645626	SP 336	S003S034W35	160
ADL 645627	SP 337	S003S034W25	160
ADL 645628	SP 338	S003S034W25	160
ADL 645629	SP 339	S003S034W26	160
ADL 645630	SP 340	S003S034W26	160
ADL 645631	SP 341	S003S034W27	160
ADL 645632	SP 342	S003S034W27	160
ADL 645633	SP 343	S003S034W27	160
ADL 645634	SP 344	S003S034W27	160
ADL 645635	SP 345	S003S034W26	160
ADL 645636	SP 346	S003S034W26	160
ADL 645637	SP 347	S003S034W25	160
ADL 645638	SP 348	S003S034W25	160
ADL 645639	SP 349	S003S034W24	160
ADL 645640	SP 350	S003S034W24	160
ADL 645641	SP 351	S003S034W23	160
ADL 645642	SP 352	S003S034W23	160
ADL 645643	SP 353	S003S034W22	160
ADL 645644	SP 354	S003S034W22	160
ADL 645645	SP 355	S003S034W22	160
ADL 645646	SP 356	S003S034W22	160
ADL 645647	SP 357	S003S034W23	160
ADL 645648	SP 358	S003S034W23	160
ADL 645649	SP 359	S003S034W24	160
ADL 645650	SP 360	S003S034W24	160
ADL 645651	SP 361	S003S034W13	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 645652	SP 362	S003S034W13	160
ADL 645653	SP 363	S003S034W14	160
ADL 645654	SP 364	S003S034W14	160
ADL 645655	SP 365	S003S034W15	160
ADL 645656	SP 366	S003S034W15	160
ADL 645657	SP 367	S003S034W15	160
ADL 645658	SP 368	S003S034W15	160
ADL 645659	SP 369	S003S034W14	160
ADL 645660	SP 370	S003S034W14	160
ADL 645661	SP 371	S003S034W13	160
ADL 645662	SP 372	S003S034W13	160

Mineral Claims
U5 Resources Inc.
1500-1040 West Georgia Street
Vancouver, BC V6E 4H1

ADL No.	Claim Name	MTRS	Total Acres
ADL 642753	BC 265	S003S038W22	160
ADL 642754	BC 266	S003S038W23	160
ADL 642755	BC 267	S003S038W23	160
ADL 642756	BC 268	S003S038W24	160
ADL 642757	BC 269	S003S038W24	160
ADL 642758	BC 270	S003S037W19	160
ADL 642759	BC 271	S003S037W19	160
ADL 642764	BC 276	S003S038W22	160
ADL 642765	BC 277	S003S038W23	160
ADL 642766	BC 278	S003S038W23	160
ADL 642767	BC 279	S003S038W24	160
ADL 642768	BC 280	S003S038W24	160
ADL 642769	BC 281	S003S037W19	160
ADL 642770	BC 282	S003S037W19	160
ADL 642775	BC 287	S003S038W15	160
ADL 642776	BC 288	S003S038W14	160
ADL 642777	BC 289	S003S038W14	160
ADL 642778	BC 290	S003S038W13	160
ADL 642779	BC 291	S003S038W13	160
ADL 642780	BC 292	S003S037W18	160
ADL 642781	BC 293	S003S037W18	160
ADL 642786	BC 298	S003S038W15	160
ADL 642787	BC 299	S003S038W14	160
ADL 642788	BC 300	S003S038W14	160
ADL 642789	BC 301	S003S038W13	160
ADL 642790	BC 302	S003S038W13	160
ADL 642791	BC 303	S003S037W18	160
ADL 642792	BC 304	S003S037W18	160
ADL 642797	BC 309	S003S038W10	160
ADL 642798	BC 310	S003S038W11	160
ADL 642799	BC 311	S003S038W11	160
ADL 642800	BC 312	S003S038W12	160
ADL 642801	BC 313	S003S038W12	160
ADL 642802	BC 314	S003S037W07	160
ADL 642803	BC 315	S003S037W07	160
ADL 642808	BC 320	S003S038W10	160
ADL 642809	BC 321	S003S038W11	160
ADL 642810	BC 322	S003S038W11	160
ADL 642811	BC 323	S003S038W12	160
ADL 642812	BC 324	S003S038W12	160
ADL 642813	BC 325	S003S037W07	160
ADL 642814	BC 326	S003S037W07	160
ADL 642819	BC 331	S003S038W03	160
ADL 642820	BC 332	S003S038W02	160
ADL 642821	BC 333	S003S038W02	160
ADL 642822	BC 334	S003S038W01	160
ADL 642823	BC 335	S003S038W01	160
ADL 642824	BC 336	S003S037W06	160
ADL 642825	BC 337	S003S037W06	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 642826	BC 338	S003S035W06	160
ADL 642827	BC 339	S003S035W06	160
ADL 642832	BC 344	S003S038W03	160
ADL 642833	BC 345	S003S038W02	160
ADL 642834	BC 346	S003S038W02	160
ADL 642835	BC 347	S003S038W01	160
ADL 642836	BC 348	S003S038W01	160
ADL 642837	BC 349	S003S037W06	160
ADL 642838	BC 350	S003S037W06	160
ADL 642839	BC 351	S003S035W06	160
ADL 642840	BC 352	S003S035W06	160
ADL 642841	BC 353	S003S035W04	160
ADL 642842	BC 354	S003S035W03	160
ADL 642843	BC 355	S003S035W03	160
ADL 642848	BC 360	S002S038W34	160
ADL 642849	BC 361	S002S038W35	160
ADL 642850	BC 362	S002S038W35	160
ADL 642851	BC 363	S002S038W36	160
ADL 642852	BC 364	S002S038W36	160
ADL 642853	BC 365	S002S037W31	160
ADL 642854	BC 366	S002S037W31	160
ADL 642855	BC 367	S002S035W31	160
ADL 642856	BC 368	S002S035W31	160
ADL 642857	BC 369	S002S035W32	160
ADL 642858	BC 370	S002S035W32	160
ADL 642859	BC 371	S002S035W33	160
ADL 642860	BC 372	S002S035W33	160
ADL 642861	BC 373	S002S035W34	160
ADL 642862	BC 374	S002S035W34	160
ADL 642867	BC 379	S002S038W34	160
ADL 642868	BC 380	S002S038W35	160
ADL 642869	BC 381	S002S038W35	160
ADL 642870	BC 382	S002S038W36	160
ADL 642871	BC 383	S002S038W36	160
ADL 642872	BC 384	S002S037W31	160
ADL 642873	BC 385	S002S037W31	160
ADL 642874	BC 386	S002S035W31	160
ADL 642875	BC 387	S002S035W31	160
ADL 642876	BC 388	S002S035W32	160
ADL 642877	BC 389	S002S035W32	160
ADL 642878	BC 390	S002S035W33	160
ADL 642879	BC 391	S002S035W33	160
ADL 642880	BC 392	S002S035W34	160
ADL 642881	BC 393	S002S035W34	160
ADL 642886	BC 398	S002S038W27	160
ADL 642887	BC 399	S002S038W26	160
ADL 642888	BC 400	S002S038W26	160
ADL 642889	BC 401	S002S038W25	160
ADL 642890	BC 402	S002S038W25	160
ADL 642891	BC 403	S002S037W30	160
ADL 642892	BC 404	S002S037W30	160
ADL 642893	BC 405	S002S035W30	160
ADL 642894	BC 406	S002S035W30	160
ADL 642895	BC 407	S002S035W29	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 642896	BC 408	S002S035W29	160
ADL 642897	BC 409	S002S035W28	160
ADL 642898	BC 410	S002S035W28	160
ADL 642899	BC 411	S002S035W27	160
ADL 642900	BC 412	S002S035W27	160
ADL 642905	BC 417	S002S038W27	160
ADL 642906	BC 418	S002S038W26	160
ADL 642907	BC 419	S002S038W26	160
ADL 642908	BC 420	S002S038W25	160
ADL 642909	BC 421	S002S038W25	160
ADL 642910	BC 422	S002S037W30	160
ADL 642911	BC 423	S002S037W30	160
ADL 642912	BC 424	S002S035W30	160
ADL 642913	BC 425	S002S035W30	160
ADL 642914	BC 426	S002S035W29	160
ADL 642915	BC 427	S002S035W29	160
ADL 642916	BC 428	S002S035W28	160
ADL 642917	BC 429	S002S035W28	160
ADL 642918	BC 430	S002S035W27	160
ADL 642919	BC 431	S002S035W27	160
ADL 642924	BC 436	S002S038W22	160
ADL 642925	BC 437	S002S038W23	160
ADL 642926	BC 438	S002S038W23	160
ADL 642927	BC 439	S002S038W24	160
ADL 642928	BC 440	S002S038W24	160
ADL 642929	BC 441	S002S037W19	160
ADL 642930	BC 442	S002S037W19	160
ADL 642931	BC 443	S002S037W20	160
ADL 642932	BC 444	S002S035W19	160
ADL 642933	BC 445	S002S035W19	160
ADL 642934	BC 446	S002S035W20	160
ADL 642935	BC 447	S002S035W20	160
ADL 642936	BC 448	S002S035W21	160
ADL 642937	BC 449	S002S035W21	160
ADL 642938	BC 450	S002S035W22	160
ADL 642939	BC 451	S002S035W22	160
ADL 642944	BC 456	S002S038W22	160
ADL 642945	BC 457	S002S038W23	160
ADL 642946	BC 458	S002S038W23	160
ADL 642947	BC 459	S002S038W24	160
ADL 642948	BC 460	S002S038W24	160
ADL 642949	BC 461	S002S037W19	160
ADL 642950	BC 462	S002S037W19	160
ADL 642951	BC 463	S002S037W20	160
ADL 642952	BC 464	S002S037W20	160
ADL 642953	BC 465	S002S035W19	160
ADL 642954	BC 466	S002S035W19	160
ADL 642955	BC 467	S002S035W20	160
ADL 642956	BC 468	S002S035W20	160
ADL 642957	BC 469	S002S035W21	160
ADL 642958	BC 470	S002S035W21	160
ADL 642959	BC 471	S002S035W22	160
ADL 642960	BC 472	S002S035W22	160
ADL 642964	BC 476	S002S038W15	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 642965	BC 477	S002S038W14	160
ADL 642966	BC 478	S002S038W14	160
ADL 642967	BC 479	S002S038W13	160
ADL 642968	BC 480	S002S038W13	160
ADL 642969	BC 481	S002S037W18	160
ADL 642970	BC 482	S002S037W18	160
ADL 642971	BC 483	S002S037W17	160
ADL 642972	BC 484	S002S037W17	160
ADL 642973	BC 485	S002S037W16	160
ADL 642974	BC 486	S002S037W16	160
ADL 642975	BC 487	S002S037W15	160
ADL 642976	BC 488	S002S035W18	160
ADL 642977	BC 489	S002S035W18	160
ADL 642978	BC 490	S002S035W17	160
ADL 642979	BC 491	S002S035W17	160
ADL 642980	BC 492	S002S035W16	160
ADL 642981	BC 493	S002S035W16	160
ADL 642982	BC 494	S002S035W15	160
ADL 642983	BC 495	S002S035W15	160
ADL 642987	BC 499	S002S038W15	160
ADL 642988	BC 500	S002S038W14	160
ADL 642989	BC 501	S002S038W14	160
ADL 642990	BC 502	S002S038W13	160
ADL 642991	BC 503	S002S038W13	160
ADL 642992	BC 504	S002S037W18	160
ADL 642993	BC 505	S002S037W18	160
ADL 642994	BC 506	S002S037W17	160
ADL 642995	BC 507	S002S037W17	160
ADL 642996	BC 508	S002S037W16	160
ADL 642997	BC 509	S002S037W16	160
ADL 642998	BC 510	S002S037W15	160
ADL 642999	BC 511	S002S035W18	160
ADL 643000	BC 512	S002S035W18	160
ADL 643001	BC 513	S002S035W17	160
ADL 643002	BC 514	S002S035W17	160
ADL 643003	BC 515	S002S035W16	160
ADL 643004	BC 516	S002S035W16	160
ADL 643005	BC 517	S002S035W15	160
ADL 643006	BC 518	S002S035W15	160
ADL 643432	BC 1001	S003S035W07	40
ADL 643433	BC 1002	S003S035W07	40
ADL 643434	BC 1003	S003S035W07	40
ADL 643435	BC 1004	S003S035W07	40
ADL 643436	BC 1005	S003S035W04	40
ADL 643437	BC 1006	S003S035W04	40
ADL 643438	BC 1007	S003S035W03	40
ADL 643439	BC 1008	S003S035W03	40
ADL 643440	BC 1009	S003S035W03	40
ADL 643441	BC 1010	S003S035W03	40
ADL 649923	BC 1171	S002S037W15	160
ADL 649924	BC 1172	S002S037W14	160
ADL 649925	BC 1173	S002S037W14	160
ADL 649926	BC 1174	S002S037W13	160
ADL 649927	BC 1175	S002S037W13	160

ADL No.	Claim Name	MTRS	Total Acres
ADL 649928	BC 1176	S002S037W15	160
ADL 649929	BC 1177	S002S037W14	160
ADL 649930	BC 1178	S002S037W14	160
ADL 649931	BC1179	S002S037W13	160
ADL 649932	BC1180	S002S037W13	160
ADL 649939	BC1187	S002S037W24	160
ADL 649940	BC1188	S002S037W24	160
ADL 649948	BC1196	S002S037W24	160
ADL 649949	BC1197	S002S037W24	160

Appendix B

Equipment Inventory (APMA Block 14)

Sonic 100 Drill (Foundex)

Designed for Sonic 4" Drilling

HT-750 Drill (Foundex)

Designed for Air Rotary, Mud Rotary and Core Drilling.

NCA 300/200 Compressor

Provides support for air rotary drilling.

Allentown Grout Plant

Water Supply Pump (Kubota)

Triplex Coring Pump

Mud Pump

Light Tower/ Generator (MultiQuip)

Appendix C

Temporary Water Sources (APMA Block 15)

Borehole ID	Previous TWUP	Stream Reach ID
GX18-KSKW-B	A2010-38	NFK-S43
GX18-KSKW-C	A2010-38	NFK-S43
GX18-GVAL-S	A2010-38	NFK-S43
GX18-GVAL-T	A2010-38	NFK-S43
GX18-NFK-AC	A2010-38	NFK-S43
GX18-NFK-AD	A2010-38	NFK-S43
GX18-GVAL-AE	A2010-38	NFK-S43
GX18-GVAL-AF	A2010-38	NFK-S43
GX18-NFK-AG	A2010-38	NFK-S43
GX18-GVAL-AP	A2010-38	NFK-S43
GX18-GVAL-AS	A2010-38	NFK-S43
GX18-NW-AT	A2010-38	NFK-S43
GX18-NW-AU	A2010-38	NFK-S43
GX18-GVAL-BB	A2010-38	NFK-S43
GX18-GVAL-BC	A2010-38	NFK-S43
GX18-GVAL-BD	A2010-38	NFK-S43
GX18-KSKW-BE	A2010-38	NFK-S43
GX18-GVAL-BH	A2010-38	NFK-S43
GX18-GVAL-BI	A2010-38	NFK-S43
GX18-GVAL-BJ	A2010-38	NFK-S43
GX18-KSKW-BK	A2010-38	NFK-S43
GX18-GVAL-BL	A2010-38	NFK-S43
GX18-KSKW-BM	A2010-38	NFK-S43
GX18-GVAL-BN	A2010-38	NFK-S43
GX18-GVAL-BO	A2010-38	NFK-S43
GX18-GVAL-BP	A2010-38	NFK-S43
GX18-GVAL-E	A2010-38	NFK-S44
GX18-EVAL-F	A2010-38	NFK-S44
GX18-EVAL-G	A2010-38	NFK-S44
GX18-EVAL-I	A2010-38	NFK-S44
GX18-EVAL-J	A2010-38	NFK-S44
GX18-EVAL-K	A2010-38	NFK-S44
GX18-EVAL-L	A2010-38	NFK-S44
GX18-EVAL-M	A2010-38	NFK-S44
GX18-EVAL-N	A2010-38	NFK-S44
GX18-EVAL-O	A2010-38	NFK-S44
GX18-EVAL-P	A2010-38	NFK-S44
GX18-NFK-V	A2010-38	NFK-S44
GX18-EVAL-X	A2010-38	NFK-S44
GX18-EVAL-AH	A2010-38	NFK-S44
GX18-EVAL-AI	A2010-38	NFK-S44

Pebble Project

Borehole ID	Previous TWUP	Stream Reach ID
GX18-EVAL-AJ	A2010-38	NFK-S44
GX18-EVAL-AK	A2010-38	NFK-S44
GX18-GVAL-AY	A2010-38	NFK-S44
GX18-EVAL-BQ	A2010-38	NFK-S44
GX18-EVAL-BR	A2010-38	NFK-S44
GX18-EVAL-BS	A2010-38	NFK-S44
GX18-EVAL-BT	A2010-38	NFK-S44
GX18-EVAL-A	A2010-38	NFK-S45
GX18-EVAL-W	A2010-38	NFK-S45
GX18-EVAL-BV	A2010-38	NFK-S45
GX18-EVAL-BW	A2010-38	NFK-S45
GX18-KSKE-U	A2010-37	SFK-S57
GX18-GVAL-AW	A2010-37	SFK-S57
GX18-GVAL-AX	A2010-37	SFK-S57
GX18-EVAL-AZ	A2010-37	SFK-S57
GX18-KSKE-BA	A2010-37	SFK-S57
GX18-DEPW-AA	A2012-20	SFK-S16
GX18-DEPW-BU	A2012-20	SFK-S16
DX18-DEPW-B	A2012-20	SFK-S16
DX18-DEPW-C	A2012-20	SFK-S16
DX18-DEPW-E	A2012-20	SFK-S16
GX18-EVAL-Q	A2012-20	SFK-S18
GX18-FRPN-R	A2012-20	SFK-S18
GX18-FRPN-Y	A2012-20	SFK-S18
GX18-FRPN-Z	A2012-20	SFK-S18
GX18-DEPW-AB	A2012-20	SFK-S18
GX18-DEPW-H	A2012-18	UTC-S8
DX18-DEPW-A	A2012-18	UTC-S8
DX18-DEPW-D	A2012-19	SFK-S15
GX18-KSKW-AL	A2013-119	SFK-S103
GX18-KSKW-AM	A2013-119	SFK-S103
GX18-GVAL-D	A2013-119	NFK-S107
GX18-GVAL-AN	A2013-119	NFK-S107
GX18-NW-AO	A2013-119	NFK-S107
GX18-GVAL-AQ	A2013-119	NFK-S107
GX18-GVAL-AR	A2013-119	NFK-S107
GX18-GVAL-AV	A2013-119	NFK-S107
GX18-GVAL-BF	A2013-119	NFK-S107
GX18-GVAL-BG	A2013-119	NFK-S107

Appendix D

Planned Drill Site Locations
(APMA Block 22)

Site ID	ADL File No	Easting (ft)	Northing (ft)
GX18-EVAL-A	ADL 524835	1396751	2162425
GX18-KSKW-B	ADL 642421	1369924	2151778
GX18-KSKW-C	ADL 642421	1370834	2153834
GX18-GVAL-D	ADL 642432	1371872	2158786
GX18-GVAL-E	ADL 566979	1386252	2162487
GX18-EVAL-F	ADL 566980	1387297	2162229
GX18-EVAL-G	ADL 542597	1388593	2157706
GX18-DEPW-H	ADL 516820	1400095	2159833
GX18-EVAL-I	ADL 566976	1386770	2161482
GX18-EVAL-J	ADL 531446	1391719	2160357
GX18-EVAL-K	ADL 531441	1391231	2159178
GX18-EVAL-L	ADL 531443	1393155	2159529
GX18-EVAL-M	ADL 531437	1390995	2157719
GX18-EVAL-N	ADL 531435	1394094	2156421
GX18-EVAL-O	ADL 531429	1391395	2155414
GX18-EVAL-P	ADL 531427	1393604	2154655
GX18-EVAL-Q	ADL 516869	1396303	2155909
GX18-FRPN-R	ADL 516857	1396703	2153240
GX18-GVAL-S	ADL 566977	1383704	2162605
GX18-GVAL-T	ADL 566982	1384905	2162942
GX18-KSKE-U	ADL 566951	1385752	2152645
GX18-NFK-V	ADL 642448	1381498	2167880
GX18-EVAL-W	ADL 531461	1391126	2166310
GX18-EVAL-X	ADL 531458	1392534	2164397
GX18-FRPN-Y	ADL 516859	1398829	2152741
GX18-FRPN-Z	ADL 516856	1402531	2151483
GX18-DEPW-AA	ADL 516862	1402576	2153206
GX18-DEPW-AB	ADL 516862	1402220	2152511
GX18-NFK-AC	ADL 642448	1382340	2167032
GX18-NFK-AD	ADL 566991	1382841	2166192
GX18-GVAL-AE	ADL 566985	1383046	2165282
GX18-GVAL-AF	ADL 566981	1382905	2164190
GX18-NFK-AG	ADL 642448	1381133	2167916
GX18-EVAL-AH	ADL 531453	1391397	2162820
GX18-EVAL-AI	ADL 531455	1393358	2163078

Pebble Project

Site ID	ADL File No	Easting (ft)	Northing (ft)
GX18-EVAL-AJ	ADL 531450	1391751	2161685
GX18-EVAL-AK	ADL 531451	1393408	2161698
GX18-KSKW-AL	ADL 642414	1373142	2148513
GX18-KSKW-AM	ADL 642418	1373313	2149153
GX18-GVAL-AN	ADL 642438	1374976	2159409
GX18-NW-AO	ADL 553553	1368994	2158559
GX18-GVAL-AP	ADL 642428	1374463	2156261
GX18-GVAL-AQ	ADL 642434	1375953	2158301
GX18-GVAL-AR	ADL 642432	1370959	2158097
GX18-GVAL-AS	ADL 642427	1370859	2155761
GX18-NW-AT	ADL 553553	1366979	2157793
GX18-NW-AU	ADL 642426	1367800	2155839
GX18-GVAL-AV	ADL 642433	1374223	2158279
GX18-GVAL-AW	ADL 566963	1385385	2156564
GX18-GVAL-AX	ADL 566955	1385385	2154512
GX18-GVAL-AY	ADL 566968	1386581	2157708
GX18-EVAL-AZ	ADL 566960	1387409	2156039
GX18-KSKE-BA	ADL 566956	1386715	2154276
GX18-GVAL-BB	ADL 642428	1374113	2155015
GX18-GVAL-BC	ADL 642429	1376136	2153956
GX18-GVAL-BD	ADL 642424	1378156	2152936
GX18-KSKW-BE	ADL 642422	1373562	2151312
GX18-GVAL-BF	ADL 642440	1380954	2161572
GX18-GVAL-BG	ADL 642438	1376127	2160263
GX18-GVAL-BH	ADL 566965	1383027	2158795
GX18-GVAL-BI	ADL 642431	1380526	2154200
GX18-GVAL-BJ	ADL 642436	1380309	2157185
GX18-KSKW-BK	ADL 642422	1371930	2152688
GX18-GVAL-BL	ADL 642428	1373211	2154638
GX18-KSKW-BM	ADL 642422	1372798	2153446
GX18-GVAL-BN	ADL 642423	1375232	2151911
GX18-GVAL-BO	ADL 642423	1376935	2151963
GX18-GVAL-BP	ADL 642423	1375996	2151237
GX18-EVAL-BQ	ADL 524832	1396836	2160605
GX18-EVAL-BR	ADL 524832	1395647	2160883
GX18-EVAL-BS	ADL 531448	1394549	2160432
GX18-EVAL-BT	ADL 531452	1394820	2161561
GX18-DEPW-BU	ADL 516814	1398227	2158551
GX18-EVAL-BV	ADL 524835	1396911	2161605
GX18-EVAL-BW	ADL 524840	1397046	2163809
DX18-DEPW-A	ADL 516821	1401917	2158850

Pebble Project

Site ID	ADL File No	Easting (ft)	Northing (ft)
DX18-DEPW-B	ADL 516809	1400155	2156795
DX18-DEPW-C	ADL 516810	1401982	2156860
DX18-DEPW-D	ADL 516819	1404004	2157578
DX18-DEPW-E	ADL 516874	1403026	2155262

Appendix E

Safety Data Sheets



Material Safety Data Sheet For Portland Cement

Section I - Identity

Manufacturer's name and address: Ash Grove Cement Company 11011 Cody Overland Park, KS 66210

Emergency Telephone Number: (913) 451-8900

Chemical Name and Synonyms: Portland Cement (CAS #65997-15-1)

Trade Name and Synonyms: Type I, IA, II, III, V

Revision Date: March 2010 (This revision supercedes all previous versions)

Chemical Family: Calcium Salts

Formula: Portland cement consists of finely ground portland cement clinker mixed with a small amount of calcium sulfate (gypsum) to control set. No specific formula applies to portland cement.

Section II - Hazardous Ingredients

Ingredients: Substances similar to the following are known to be present in portland cement:

3CaO.SiO₂ (CAS # 12168-85-3)
2CaO.SiO₂ (CAS # 10034-77-2)
3CaO.Al₂O₃ (CAS # 12042-78-3)
4CaO.Al₂O₃.Fe₂O₃ (CAS # 12068-35-8)
CaSO₄.XH₂O (CAS # 13397-24-5)

Small amounts of CaO, MgO, K₂SO₄, Na₂SO₄ may also be present.

Hazardous Components(s):

Substance	CAS Number	OSHA PEL	ACGIH TLV-TWA	MSHA Exposure Limits
Portland Cement – total dust	65997-15-1	15 mg/m ³	1 mg/m ³ (2010) * (Respirable Dust)	10 mg/m ³
Portland Cement - respirable dust	65997-15-1	5 mg/m ³	Not Applicable	Not Applicable
Quartz	14808-60-7	10 mg/m ³ (% silica + 2)	0.025 mg/m ³ (2006) (respirable fraction)	10 mg/m ³ (% silica + 2)

Note: Some portland cements may contain small amounts of crystalline silica (slightly more than 0.1%).

* Applicable if <1% crystalline silica is present.

Section III - Physical Data

Boiling Point: Not applicable.

Vapor Pressure: Not applicable.

Vapor Density: Not applicable.

Solubility in Water: Slight (0.1-1.0%)

pH (in water) (ASTM D 1293-95): 12 - 13

Specific Gravity: (H₂O=1) 2.9 - 3.1

Evaporation Rate: Not applicable.

Appearance and Odor: Gray powder; no odor.

Melting Point: Not applicable

Section IV - Fire and Explosion Hazard Data

Flash Point: Portland cement is noncombustible and not explosive.

Flammable or Explosive Limits: Not applicable.

Extinguishing Media: Not applicable

Special Firefighting Procedures: Not applicable. (Although portland cement poses no fire-related hazards, a self-contained breathing apparatus is recommended to limit exposure to combustion products when fighting any fire.)

Unusual Fire and Explosion Hazards: Not applicable.

Lower Explosive Limit: Not applicable.

Upper Explosive Limit: Not applicable.

Section V - Health Hazard Data

Acute Effects: Wet cement on unprotected skin, whether direct or through saturated clothing, can cause severe, third degree caustic burns. **NOTE: Portland cement burns skin with little warning; discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure. The severity of the burn may not be detected until several hours after the damage begins.** Dry portland cement can produce mild irritation to severe burns of the eye; it can irritate the upper respiratory system.

Chronic Effects: Dry portland cement can cause inflammation of the lining of the nose and the cornea. Repeated exposure to portland cement may result in drying of the skin and may lead to thickening, cracking, or fissuring of the skin. Hypersensitive individuals may develop an allergic dermatitis (possibly due to trace amounts of hexavalent chromium at less than 0.005%). This reaction may appear in several forms including a mild rash to severe skin ulcers. Persons already sensitized may react to their first contact with the product. Other persons may experience this effect after years of exposure to portland cement products.

While portland cement typically has less than 0.2% crystalline silica, other additives to portland cement and those components (e.g. aggregates) added to produce portland cement concrete may significantly increase the amount of crystalline silica that is present. Exposure to respirable crystalline silica without the use of a respirator can cause silicosis and may aggravate other lung conditions.

Signs and Symptoms of Exposure: Burning sensation around moist tissue areas (i.e., eyes, nose, upper respiratory system); painful burning on exposed skin that can develop with little warning. **Exposure of sufficient duration to wet portland cement can cause serious, potentially irreversible tissue (skin or eye) destruction in the form of chemical (caustic) burns, including third degree burns.** The same kind of destruction can occur if wet or moist areas of the body are exposed for sufficient duration to dry portland cement. **DO NOT ALLOW WET PORTLAND CEMENT TO GET INSIDE BOOTS, SHOES, OR GLOVES AND DO NOT ALLOW WET, SATURATED CLOTHING TO REMAIN AGAINST THE SKIN.**

Medical Conditions Generally Aggravated by Exposure: Pre-existing skin conditions may be worsened. Silicosis may aggravate other chronic pulmonary conditions and may increase the risk of pulmonary tuberculosis infection.

Chemical Listed as Carcinogenic or Potential Carcinogen: Portland cements are not considered carcinogenic.

However, the International Agency for Research on Cancer (IARC) has determined, primarily through animal studies, that silica is a known human carcinogen. The National Toxicology Program (NTP) has characterized respirable quartz silica as reasonably anticipated to be a carcinogen. OSHA does not regulate silica as a carcinogen.

Emergency and First Aid Procedures: Irrigate eyes immediately and repeatedly with large amount of clean water for at least 15 minutes and get prompt medical attention. Wash exposed skin areas with pH-neutral soap and clean water. Apply sterile dressings; seek medical treatment in all cases of prolonged exposure to wet portland cement, portland cement mixtures, liquids from fresh portland cement products, or prolonged wet skin exposure to dry portland cement. If ingested, consult a physician immediately. Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately. In the event of inhalation, remove to fresh air. Seek medical attention if coughing and other symptoms do not subside. Inhalation of gross amounts of portland cement requires immediate medical attention.

Section VII-Reactivity Data

Stability: Product is stable. Keep dry until used.

Incompatibility: Aluminum powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas. Portland cement is highly alkaline and will react with acids to produce a violent, heat-generating reaction. Toxic gases or vapors may be given off depending on the acid involved.

Hazardous Decomposition Products: None

Hazardous Polymerization: Will not occur.

Section VII - Spill Procedures

Steps to be taken in case material is spilled: Use dry cleanup methods that do not disperse the dust into the air. Avoid breathing the dust. Emergency procedures are not required.

Disposal Method: Small amounts of material can be returned to the container for later use if it is not contaminated. Dispose of waste material in accordance with Federal, State and local requirements. Portland cement is not a hazardous waste as defined by the Resource Conservation and Recovery Act (40 CFR 261).

Section VIII - Special Protection Information

Respiratory Protection: Avoid actions that cause dust to become airborne. Use local or general ventilation to control exposures below applicable exposure limits.

Use NIOSH/MSHA-approved (under 30 CFR 11) or NIOSH-approved (under 42 CFR 84) respirators in poorly ventilated areas, if an applicable exposure limit is exceeded, or when dust causes discomfort or irritation. (Advisory: Respirators and filters purchased after July 10, 1998 must be certified under 42 CFR 84.)

Ventilation: Local exhaust can be used to control airborne dust levels.

Eye Protection: When engaged in activities where portland cement dust or wet portland cement or concrete could contact the eye, wear goggles or safety glasses with sideshields. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with portland cement or wet portland cement products.

Skin Protection: Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened (wet) portland cement products. If contact occurs, promptly wash affected area with soap and water. **DO NOT ALLOW WET PORTLAND CEMENT TO GET INSIDE BOOTS, SHOES, OR GLOVES AND DO NOT ALLOW WET, SATURATED CLOTHING TO REMAIN AGAINST THE SKIN.**

Do not rely on barrier creams; barrier creams should not be used in place of gloves. Use impervious, abrasion- and alkali-resistant gloves, boots and protective clothing to protect the skin from prolonged contact with wet portland cement in plastic concrete, mortar or slurries.

Work/Hygienic Practices: Periodically wash areas contacted by dry portland cement or by wet portland cement or concrete fluids with a pH neutral soap and clean, uncontaminated water. Wash again at the end of the work. If irritation occurs, immediately wash the affected area and seek treatment. If clothing becomes saturated with wet portland cement or concrete, it should be removed and replaced with clean dry clothing. Follow listed precautions as appropriate during repair or maintenance work on contaminated equipment.

Section IX – Transportation Information

Hazardous materials/proper shipping name description:

Portland cement is not hazardous under U.S. Department of Transportation (DOT) regulations.

Hazard class:

Not applicable

Identification number:

Not applicable

Required label text:

Not applicable

Hazardous substances / reportable quantities (RQ)

Not applicable

Section X – Other Regulatory Information

Status under USDOL-OSHA Hazard Communication Standard (29 CFR 1910.1200)

Portland cement is considered a “hazardous chemical” under this regulation and should be a part of any Hazard Communication Program.

Status under CERCLA / Superfund 40 CFR 117 and 302

Not listed.

Status under SARA (Title III), Sections 311 and 312

Portland cement qualifies as a “hazardous substance” with delayed health effects.

Status under SARA (Title III), Section 313

This product may contain constituents listed under SARA (Title III) Section 313, but not in amounts requiring supplier notification under 40 CFR Part 372 Subpart C.

Status under TSCA (as of May 1997)

Portland cement and some of the substances in portland cement are on the TSCA inventory list.

Status under the Federal Hazardous Substances Act

Portland cement is a “hazardous substance” subject to statutes promulgated under the subject act.

Status under California Proposition 65

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

Status under the Canadian Environmental Protection Act

Not listed.

Status under WHMIS

Portland cement is considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations (Class E – Corrosive Material) and is therefore subject to the labeling and MSDS requirements of the Workplace Hazardous Materials Information System (WHMIS).

Other Important Information

Portland cement should only be used by knowledgeable persons. A key to using the product safely requires the user to recognize that portland cement reacts with water, and that some of the intermediate products of this reaction (that is, those present while portland cement is “setting”) pose a far more severe hazard than does portland cement itself.

While the information provided in this material safety data sheet is thought to provide a useful summary of the hazards of portland cement as it is commonly used, the sheet cannot anticipate and provide all the information that might be needed in every situation. Inexperienced product users should obtain training before using this product.

In particular, the data provided in this sheet do not address hazards that may be posed by other materials that may be added to portland cement to produce portland cement products. Users should review other relevant material safety data sheets before working with this portland cement or on portland cement products, for example portland cement concrete.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY ASH GROVE CEMENT COMPANY, except that the product shall conform to contracted specifications. The information provided herein was believed by Ash Grove Cement Company to be accurate at the time of preparation or prepared by sources by believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe use and handling of product and to determine the suitability of the product for its intended use.

This product neither contains nor is directly manufactured with any controlled ozone depleting substances, Class I and II.

MATERIAL SAFETY DATA SHEET

Product Trade Name: **QUIK-GEL®**

Revision Date: 03-Jan-2008

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: QUIK-GEL®
Synonyms: None
Chemical Family: Mineral
Application: Viscosifier
Manufacturer/Supplier: Baroid Fluid Services
Product Service Line of Halliburton
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

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

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Bentonite	1302-78-9	60 - 100%	Not applicable	Not applicable
Crystalline silica, quartz	14808-60-7	1 - 5%	0.025 mg/m ³	10 mg/m ³ %SiO ₂ + 2
Crystalline silica, cristobalite	14464-46-1	0 - 1%	0.025 mg/m ³	1/2 x 10 mg/m ³ %SiO ₂ + 2
Crystalline silica, tridymite	15468-32-3	0 - 1%	0.05 mg/m ³	1/2 x 10 mg/m ³ %SiO ₂ + 2

More restrictive exposure limits may be enforced by some states, agencies, or other authorities.

3. HAZARDS IDENTIFICATION

Hazard Overview

CAUTION! - ACUTE HEALTH HAZARD

May cause eye and respiratory irritation.

DANGER! - CHRONIC HEALTH HAZARD

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

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

4. FIRST AID MEASURES

Inhalation

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin

Wash with soap and water. Get medical attention if irritation persists.

Eyes

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

Ingestion

Under normal conditions, first aid procedures are not required.

Notes to Physician

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Not Determined

Flash Point/Range (C): Not Determined

Flash Point Method: Not Determined

Autoignition Temperature (F): Not Determined

Autoignition Temperature (C): Not Determined

Flammability Limits in Air - Lower (%): Not Determined

Flammability Limits in Air - Upper (%): Not Determined

Fire Extinguishing Media All standard firefighting media.

Special Exposure Hazards Not applicable.

Special Protective Equipment for Fire-Fighters Not applicable.

NFPA Ratings: Health 0, Flammability 0, Reactivity 0

HMIS Ratings: Health 0*, Flammability 0, Physical Hazard 0, PPE: E

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures None known.

Procedure for Cleaning / Absorption

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

7. HANDLING AND STORAGE

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

Storage Information Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Keep from excessive heat. Do not reuse empty container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

Respiratory Protection Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product.

Hand Protection Normal work gloves.

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

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

Other Precautions None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Powder
Color:	Various
Odor:	Mild earthy
pH:	8-10
Specific Gravity @ 20 C (Water=1):	2.6
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	47.6-72.1
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Slightly soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined

9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Weight (g/mole): Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Hydrofluoric acid.
Hazardous Decomposition Products	Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	<p>Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).</p> <p>Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).</p>
Skin Contact	May cause mechanical skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	None known
Aggravated Medical Conditions	Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

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

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

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

Other Information For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768 (1997).

Toxicity Tests

Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Refer to <u>IARC Monograph 68, Silica, Some Silicates and Organic Fibres</u> (June 1997).
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	TLM96: 10000 ppm (Oncorhynchus mykiss)
Acute Crustaceans Toxicity:	Not determined

Acute Algae Toxicity:	Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Bury in a licensed landfill according to federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

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

MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.
Canadian Regulations	
Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2A Very Toxic Materials Crystalline silica

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS

Not applicable

Additional Information

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

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

Disclaimer Statement

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

*****END OF MSDS*****

**Jet A Aviation Fuel**

Version 2.2

Revision Date 2016-05-17

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

Product Name : Jet A Aviation Fuel
Material : 1102484, 1103429, 1102481, 1103418, 1102485, 1102483,
1102482, 1024254, 1024255, 1024256, 1024257, 1104981,
1104992

Use : Fuel

Company : Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:**Health:**

866.442.9628 (North America)

1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)

Asia: +800 CHEMCALL (+800 2436 2255) China:+86-21-22157316

EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group

E-mail address : SDS@CPChem.com

Website : www.CPChem.com

SECTION 2: Hazards identification**Classification of the substance or mixture**

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Emergency Overview**Danger**

Form: Liquid **Physical state:** Liquid **Color:** Clear light yellow

OSHA Hazards : Flammable Liquid, Carcinogen, Mild skin irritant, Aspiration hazard, Delayed target organ effects

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Revision Date 2016-05-17

Classification

: Flammable liquids , Category 3
 Skin irritation , Category 2
 Carcinogenicity , Category 2
 Specific target organ systemic toxicity - single exposure ,
 Category 3 , Central nervous system
 Specific target organ systemic toxicity - repeated exposure ,
 Category 1 , Eyes, Blood
 Aspiration hazard , Category 1

Labeling

Symbol(s)



Signal Word

: Danger

Hazard Statements

: H226: Flammable liquid and vapor.
 H304: May be fatal if swallowed and enters airways.
 H315: Causes skin irritation.
 H336: May cause drowsiness or dizziness.
 H351: Suspected of causing cancer.
 H372: Causes damage to organs (Eyes, Blood) through
 prolonged or repeated exposure.

Precautionary Statements

: **Prevention:**
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been
 read and understood.
 P210 Keep away from heat/sparks/open flames/hot surfaces.
 No smoking.
 P233 Keep container tightly closed.
 P240 Ground/bond container and receiving equipment.
 P241 Use explosion-proof electrical/ ventilating/ lighting/
 equipment.
 P242 Use only non-sparking tools.
 P243 Take precautionary measures against static discharge.
 P260 Do not breathe dust/fume/gas/mist/vapor/spray.
 P264 Wash skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/ protective clothing/ eye
 protection/ face protection.
Response:
 P301 + P310 IF SWALLOWED: Immediately call a POISON
 CENTER/doctor.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off
 immediately all contaminated clothing. Rinse skin with
 water/shower.
 P304 + P340 + P312 IF INHALED: Remove person to fresh
 air and keep comfortable for breathing. Call a POISON
 CENTER/doctor if you feel unwell.
 P308 + P313 IF exposed or concerned: Get medical advice/
 attention.
 P331 Do NOT induce vomiting.
 P332 + P313 If skin irritation occurs: Get medical advice/

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attention.

P362 Take off contaminated clothing and wash before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity:**IARC**

Group 2B: Possibly carcinogenic to humans

Naphthalene 91-20-3

NTP

Reasonably anticipated to be a human carcinogen

Naphthalene 91-20-3

ACGIH

Confirmed animal carcinogen with unknown relevance to humans

Kerosene C9-C16 8008-20-6

SECTION 3: Composition/information on ingredients

Synonyms : Aviation Turbine Fuel A
Kerosene Turbine Fuel
Kerosene
Jet A-1 Fuel
Jet A Fuel

Molecular formula : UVCB

Component	CAS-No.	Weight %
Kerosene C9-C16	8008-20-6	100
Naphthalene	91-20-3	0 - 3

SECTION 4: First aid measures

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

If inhaled : Consult a physician after significant exposure. If unconscious place in recovery position and seek medical advice.

In case of skin contact : If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

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If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.
Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point : 37.8 °C (100.0 °F)

Autoignition temperature : 210 °C (410 °F)

Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemical.

Unsuitable extinguishing media : High volume water jet.

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

Fire and explosion protection : Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.

Hazardous decomposition products : Hydrocarbons. Carbon oxides.

SECTION 6: Accidental release measures

Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

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Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7: Handling and storage**Handling**

Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8: Exposure controls/personal protection**Ingredients with workplace control parameters****US**

Ingredients	Basis	Value	Control parameters	Note
Kerosene C9-C16	ACGIH	TWA	200 mg/m3	CNS impair, URT irr, skin irr, P, A3, Skin, varies,
	OSHA Z-1	TWA	500 ppm, 2,000 mg/m3	(b),
	OSHA Z-1-A	TWA	400 ppm, 1,600 mg/m3	
Naphthalene	ACGIH	TWA	10 ppm,	hematologic eff, URT irr, eye irr, eye dam, (), A4, Skin,
	ACGIH	STEL	15 ppm,	hematologic eff, URT irr, eye irr, eye dam, (), A4, Skin,
	OSHA Z-1	TWA	10 ppm, 50 mg/m3	(b),
	OSHA Z-1-A	TWA	10 ppm, 50 mg/m3	
	OSHA Z-1-A	STEL	15 ppm, 75 mg/m3	

() Adopted values or notations enclosed are those for which changes are proposed in the NIC
 (b) The value in mg/m3 is approximate.
 A3 Confirmed animal carcinogen with unknown relevance to humans
 A4 Not classifiable as a human carcinogen
 CNS impair Central Nervous System impairment
 eye dam Eye damage
 eye irr Eye irritation
 hematologic eff Hematologic effects
 P Application restricted to conditions in which there are negligible aerosol exposures
 Skin Danger of cutaneous absorption
 skin irr Skin irritation
 URT irr Upper Respiratory Tract irritation

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varies varies

Immediately Dangerous to Life or Health Concentrations (IDLH)

Substance name	CAS-No.	Control parameters	Update
Naphthalene	91-20-3	Immediately Dangerous to Life or Health Concentration Value 250 ppm	1995-03-01

Engineering measures

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

Personal protective equipment

- Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
- Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

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

- Form : Liquid
Physical state : Liquid

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Color	: Clear light yellow
Safety data	
Flash point	: 37.8 °C (100.0 °F)
Lower explosion limit	: 0.6 %(V)
Upper explosion limit	: 4.7 %(V)
Oxidizing properties	: no
Autoignition temperature	: 210 °C (410 °F)
Molecular formula	: UVCB
Molecular weight	: Not applicable
pH	: Not applicable
Pour point	: No data available
Boiling point/boiling range	: 149 - 300 °C (300 - 572 °F)
Vapor pressure	: 0.40 MMHG
Relative density	: 0.775 at 20 °C (68 °F)
Density	: 806.5 g/l
Water solubility	: Negligible
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: 1.5 cSt at 20 °C (68 °F)
Relative vapor density	: 4.5 (Air = 1.0)
Evaporation rate	: 1
Percent volatile	: > 99 %

SECTION 10: Stability and reactivity

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Conditions to avoid : Heat, flames and sparks.

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- Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
- Hazardous decomposition products : Hydrocarbons
Carbon oxides
- Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

- Jet A Aviation Fuel**
Acute oral toxicity : LD50: > 5,000 mg/kg
Species: Rat
- Acute inhalation toxicity**
Kerosene C9-C16 : LC50: > 5.2 mg/l
Exposure time: 4 h
Species: Rat
- Acute dermal toxicity**
Kerosene C9-C16 : LD50: >2000 milligram per kilogram
Species: Rabbit
- Jet A Aviation Fuel**
Skin irritation : May cause skin irritation in susceptible persons.
- Jet A Aviation Fuel**
Eye irritation : Vapors may cause irritation to the eyes, respiratory system and the skin.
- Jet A Aviation Fuel**
Sensitization : No adverse effects expected.
- Repeated dose toxicity**
Kerosene C9-C16 : Species: Rabbit
Application Route: Dermal
Dose: 0, 200, 1000, 2000 mg/kg
Exposure time: 28 day
Number of exposures: 3 times/wk
Lowest observable effect level: 1,000 mg/kg
- Carcinogenicity**
Kerosene C9-C16 : Species: Mouse
Dose: 0, 28.5, 50, 100%
Exposure time: 104 wks
Number of exposures: 2, 4, or 7 times/wk
Remarks: Weak dermal carcinogen
- Naphthalene : Species: Mouse
Sex: male

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Dose: 10, 30 ppm
 Exposure time: 105 weeks
 Number of exposures: 6 hours/day, 5 days/week
 Test substance: yes
 Print Date: No information available.
 Remarks: No evidence of carcinogenicity

Species: Mouse
 Sex: female
 Dose: 10, 30 ppm
 Exposure time: 105 weeks
 Number of exposures: 6 hours/day, 5 days/week
 Test substance: yes
 Print Date: No information available.
 Remarks: increased incidence of alveolar/bronchiolar adenomas

Species: Rat
 Sex: male and female
 Dose: 10, 30, 60 ppm
 Exposure time: 105 weeks
 Number of exposures: 6 hours/day, 5 days/week
 Test substance: yes
 Print Date: No information available.
 Remarks: nose respiratory epithelial adenoma, increased incidence of olfactory neuroblastomas

Developmental Toxicity

Kerosene C9-C16 : Species: Rat
 Application Route: Inhalation
 Dose: 0, 106, 364 ppm
 Exposure time: 6 hrs/d
 Test period: GD 6-15
 NOAEL Teratogenicity: 364 ppm
 NOAEL Maternal: 364 ppm

Naphthalene : Species: Rabbit
 Application Route: oral gavage
 Dose: 40, 200, 400 mg/kg
 Test period: 29 d, GD 6-18
 NOAEL Teratogenicity: 400 mg/kg

**Jet A Aviation Fuel
Aspiration toxicity**

: May be fatal if swallowed and enters airways.
 Substances known to cause human aspiration toxicity hazards or to be regarded as if they cause human aspiration toxicity hazard.

CMR effects

Naphthalene : Carcinogenicity: Limited evidence of carcinogenicity in animal studies

**Jet A Aviation Fuel
Further information**

: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents

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may decrease the skin.

SECTION 12: Ecological information**Toxicity to fish**

Kerosene C9-C16 : LL50: 2 - 5 mg/l
 Exposure time: 96 h
 Species: *Oncorhynchus mykiss* (rainbow trout)
 Method: OECD Test Guideline 203

Naphthalene LC50: 3.2 mg/l
 Exposure time: 96 h
 Species: *Pimephales promelas* (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates

Kerosene C9-C16 : EL50: 1.4 mg/l
 Exposure time: 48 h
 Species: *Daphnia magna* (Water flea)
 Method: OECD Test Guideline 202

Naphthalene LC50: 2.16 mg/l
 Exposure time: 48 h
 Species: *Daphnia magna* (Water flea)

Toxicity to algae

Kerosene C9-C16 : EL50: 1 - 3 mg/l
 Exposure time: 72 h
 Species: *Raphidocellus subcapitata* (algae)
 Method: OECD Test Guideline 201

Naphthalene EC50: 2.96 mg/l
 Exposure time: 48 h
 Species: *Selenastrum capricornutum* (algae)

Elimination information (persistence and degradability)

Biodegradability : Expected to be ultimately biodegradable

Ecotoxicology Assessment

Acute aquatic toxicity
 Kerosene C9-C16 : Toxic to aquatic life.

Naphthalene : Very toxic to aquatic life.

Chronic aquatic toxicity
 Kerosene C9-C16 : Toxic to aquatic life with long lasting effects.

Naphthalene : Very toxic to aquatic life with long lasting effects.

Additional ecological : Toxic to aquatic life with long lasting effects.

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information

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III, (37.8 °C), MARINE POLLUTANT, (KEROSENE)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III, (D/E), ENVIRONMENTALLY HAZARDOUS, (KEROSENE)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III, ENVIRONMENTALLY HAZARDOUS,

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(KEROSENE)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III, ENVIRONMENTALLY HAZARDOUS, (KEROSENE)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information**National legislation**

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO - KNOW

CERCLA Reportable Quantity : 3333 lbs
Naphthalene

SARA 302 Reportable Quantity : This material does not contain any components with a SARA 302 RQ.

SARA 302 Threshold Planning Quantity : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

SARA 313 Ingredients : The following components are subject to reporting levels established by SARA Title III, Section 313:
: Naphthalene - 91-20-3

Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

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This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMII Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations**Pennsylvania Right To Know**

: Kerosene C9-C16 - 8008-20-6
Naphthalene - 91-20-3

New Jersey Right To Know

: Kerosene C9-C16 - 8008-20-6
Naphthalene - 91-20-3

**California Prop. 65
Ingredients**

: WARNING! This product contains a chemical known in the State of California to cause cancer.

Notification status

Europe REACH	:	This mixture contains only ingredients which have been subject to a pre-registration according to Regulation (EU) No. 1907/2006 (REACH).
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America TSCA	:	On TSCA Inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Australia AICS	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Korea KECI	:	On the inventory, or in compliance with the inventory
Philippines PICCS	:	On the inventory, or in compliance with the inventory
China IECSC	:	On the inventory, or in compliance with the inventory

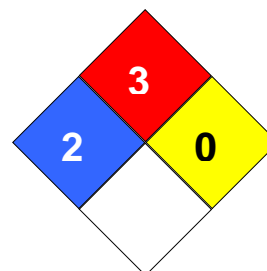
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SECTION 16: Other information

NFPA Classification : Health Hazard: 2
Fire Hazard: 3
Reactivity Hazard: 0

**Further information**

Legacy SDS Number : 1975

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical	TWA	Time Weighted Average

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	Substances in China		
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Hydraulic Oil AW 32, 46, 68

Product Use: Hydraulic Oil

Product Number(s): 255673, 255674, 255675, 293130, 293131, 293132

Company Identification

Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

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

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed

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

SECTION 5 FIRE FIGHTING MEASURES

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

Unusual Fire Hazards: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose

such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

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

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Silver Shield, Viton, Nitrile Rubber.

Respiratory Protection: No respiratory protection is normally required.

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

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

Color: Colorless to yellow

Physical State: Liquid

Odor: Petroleum odor

Odor Threshold: No data available

pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)

Vapor Density (Air = 1): >1

Initial Boiling Point: 315°C (599°F)

Solubility: Soluble in hydrocarbon solvents; insoluble in water.

Freezing Point: Not Applicable

Melting Point: No data available

Density: 0.87 kg/l @ 15°C (59°F) (Typical)

Viscosity: 28.80 mm²/s @ 40°C (104°F) Minimum

Coefficient of Therm. Expansion / °F: No data available

Evaporation Rate: No data available

Decomposition temperature: No data available

Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 170 °C (338 °F) Minimum

Autoignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

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

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

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

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

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

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

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

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

Acute Toxicity Estimate: Not Determined

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

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

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

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

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

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).

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

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

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

MOBILITY

No data available.



PERSISTENCE AND DEGRADABILITY

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

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

SECTION 14 TRANSPORT INFORMATION

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

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

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

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

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

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	NO
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

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

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:

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

NEW JERSEY RTK CLASSIFICATION:

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

SECTION 16 OTHER INFORMATION

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

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

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1 - 16
Revision Date: FEBRUARY 05, 2016

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

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

Cancer	
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

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

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

SAFETY DATA SHEET

Product Trade Name: FLY ASH

Revision Date: 18-Apr-2017

Revision Number: 18

1. Identification

1.1. Product Identifier

Product Trade Name: FLY ASH
Synonyms Fly Ash
Chemical Family: Inorganic
Internal ID Code HM000716

1.2 Recommended use and restrictions on use

Application: Light Weight Cement Additive
Uses advised against No information available

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier

Halliburton Energy Services Inc.
P.O. Box 1431
Duncan, Oklahoma 73536-0431

Halliburton Energy Services
645 - 7th Ave SW Suite 1800
Calgary, AB
T2P 4G8
Canada

Prepared By Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number

Emergency Telephone Number: 1-866-519-4752 or 1-760-476-3962
Global Incident Response Access Code: 334305
Contract Number: 14012

2. Hazards Identification

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

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

2.2. Label Elements

Hazard Pictograms



Signal Word:	Danger
Hazard Statements	H350 - May cause cancer by inhalation H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
Precautionary Statements	
Prevention	P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P280 - Wear protective gloves/protective clothing/eye protection/face protection
Response	P308 + P313 - IF exposed or concerned: Get medical advice/attention P314 - Get medical attention/advice if you feel unwell
Storage	P405 - Store locked up
Disposal	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Crystalline silica, quartz	14808-60-7	5 - 10%	Carc. 1A (H350) STOT RE 1 (H372)

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

4. First Aid Measures

4.1. Description of first aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Skin	Wash with soap and water.
Ingestion	Under normal conditions, first aid procedures are not required.

4.2 Most important symptoms/effects, acute and delayed

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

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

Notes to Physician Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

None - does not burn.

Extinguishing media which must not be used for safety reasons

None known.

5.2 Specific hazards arising from the substance or mixture

Special exposure hazards in a fire

None anticipated

5.3 Special protective equipment and precautions for fire-fighters

Special protective equipment for firefighters

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

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

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

7. Handling and storage

7.1. Precautions for safe handling

Handling Precautions

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

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store in a cool, dry location. Store in a well ventilated area. Store locked up. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Product has a shelf life of 36 months.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Crystalline silica, quartz	14808-60-7	TWA: 50 µg/m ³	TWA: 0.025 mg/m ³

8.2 Appropriate engineering controls

Engineering Controls

Use approved industrial ventilation and local exhaust as required to maintain

exposures below applicable exposure limits.

8.3 Individual protection measures, such as personal protective equipment

Personal Protective Equipment	If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
Respiratory Protection	Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.
Hand Protection	Normal work gloves.
Skin Protection	Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.
Eye Protection	Wear safety glasses or goggles to protect against exposure.
Other Precautions	None known.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

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

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
pH:	No data available
Freezing Point / Range	No data available
Melting Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	No data available
Flammability (solid, gas)	No data available
Upper flammability limit	No data available
Lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	2.3
Water Solubility	Insoluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%)	No data available
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10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Will Not Occur

10.4. Conditions to avoid

None anticipated

10.5. Incompatible materials

Hydrofluoric acid.

10.6. Hazardous decomposition products

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

11. Toxicological Information

11.1 Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Acute Toxicity

Inhalation

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

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

Eye Contact

May cause mechanical irritation to eye.

Skin Contact

None known.

Ingestion

None known.

Chronic Effects/Carcinogenicity

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

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

internal organs) and kidney disease.

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Crystalline silica, quartz	14808-60-7	> 15000 mg/kg (human)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin

Substances	CAS Number	Serious eye damage/irritation
Crystalline silica, quartz	14808-60-7	Non-irritating to the eye

Substances	CAS Number	Skin Sensitization
Crystalline silica, quartz	14808-60-7	No information available.

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

Substances	CAS Number	Mutagenic Effects
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Crystalline silica, quartz	14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.

Substances	CAS Number	Reproductive toxicity
Crystalline silica, quartz	14808-60-7	No information available

Substances	CAS Number	STOT - single exposure
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Substances	CAS Number	Aspiration hazard
Crystalline silica, quartz	14808-60-7	Not applicable

12. Ecological Information

12.1. Toxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Crystalline silica, quartz	14808-60-7	EC50 (72 h) =440 mg/L (Selenastrum capricornutum)(similar substance)	LL0 (96 h) =10000 mg/L (Danio rerio)(similar substance)	No information available	LL50 (24 h) >10000 mg/L (Daphnia magna)(similar substance)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Crystalline silica, quartz	14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Crystalline silica, quartz	14808-60-7	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Crystalline silica, quartz	14808-60-7	No information available

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Disposal methods Bury in a licensed landfill according to federal, state, and local regulations.
Contaminated Packaging Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

14. Transport Information

US DOT

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

Canadian TDG

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IMDG/IMO

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IATA/ICAO

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

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

Special Precautions for User None

15. Regulatory Information**US Regulations**

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

TSCA Significant New Use Rules - S5A2

Substances	CAS Number	TSCA Significant New Use Rules - S5A2
Crystalline silica, quartz	14808-60-7	Not applicable

EPA SARA Title III Extremely Hazardous Substances

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Crystalline silica, quartz	14808-60-7	Not applicable

EPA SARA (311,312) Hazard Class

Chronic Health Hazard

EPA SARA (313) Chemicals

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Crystalline silica, quartz	14808-60-7	Not applicable	Not applicable

EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
Crystalline silica, quartz	14808-60-7	Not applicable

EPA RCRA Hazardous Waste Classification

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

California Proposition 65

Substances	CAS Number	California Proposition 65
Crystalline silica, quartz	14808-60-7	carcinogen

U.S. State Right-to-Know Regulations

Substances	CAS Number	MA Right-to-Know Law	NJ Right-to-Know Law	PA Right-to-Know Law
Crystalline silica, quartz	14808-60-7	Carcinogen Extraordinarily hazardous	1660	Present

NFPA Ratings: Health 0, Flammability 0, Reactivity 0

HMIS Ratings: Health 0*, Flammability 0, Reactivity 0

Canadian Regulations

Canadian Domestic Substances All components listed on inventory or are exempt.

List (DSL)

16. Other information**Preparation Information**

Prepared By Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

Revision Date: 18-Apr-2017

Reason for Revision SDS sections updated:
1

Additional information

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

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

Key or legend to abbreviations and acronyms used in the safety data sheet

bw – body weight

CAS – Chemical Abstracts Service

d - day

EC50 – Effective Concentration 50%

ErC50 – Effective Concentration growth rate 50%

h - hour

LC50 – Lethal Concentration 50%

LD50 – Lethal Dose 50%

LL50 – Lethal Loading 50%

mg/kg – milligram/kilogram

mg/L – milligram/liter

mg/m³ - milligram/cubic meter

mm - millimeter

mmHg - millimeter mercury

NIOSH – National Institute for Occupational Safety and Health

NTP – National Toxicology Program

OEL – Occupational Exposure Limit

PEL – Permissible Exposure Limit

ppm – parts per million

STEL – Short Term Exposure Limit

TWA – Time-Weighted Average

UN – United Nations

w/w - weight/weight

Key literature references and sources for data

www.ChemADVISOR.com/

OSHA

NZ CCID

ECHA C&L

Disclaimer Statement

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

End of Safety Data Sheet

Safety Data Sheet



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Delo 400 LE SAE 15W-40

Product Use: Diesel Engine Oil
Product Number(s): 222220, 278058
Synonyms: Delo 400 LE SAE 15W-40 ISOCLEAN Certified

Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information
email : lubemsds@chevron.com
Product Information: 1 (800) 582-3835, LUBETEK@chevron.com

SECTION 2 HAZARDS IDENTIFICATION

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

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

Zinc alkyl dithiophosphate	68649-42-3	0.1 - < 2.5 %weight
01154100-5301P	Trade secret	0.1 - < 1 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed Not Applicable

SECTION 5 FIRE FIGHTING MEASURES

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

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Precautionary Measures: Keep out of the reach of children.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Zinc alkyl dithiophosphate	Not Applicable	--	--	--	--
01154100-5301P	Not Applicable	--	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

- Color:** Brown
- Physical State:** Liquid
- Odor:** Petroleum odor
- Odor Threshold:** No data available
- pH:** Not Applicable
- Vapor Pressure:** <0.01 mmHg @ 37.8 °C (100 °F)
- Vapor Density (Air = 1):** >1
- Initial Boiling Point:** 315°C (599°F)
- Solubility:** Soluble in hydrocarbons; insoluble in water
- Freezing Point:** Not Applicable
- Melting Point:** Not Applicable
- Specific Gravity:** 0.87 - 0.9 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)
- Density:** 0.8806 kg/l @ 15°C (59°F) (Typical)
- Viscosity:** 14.6 mm2/s @ 100°C (212°F) (Typical)
- Evaporation Rate:** No data available
- Decomposition temperature:** No Data Available
- Octanol/Water Partition Coefficient:** No data available

FLAMMABLE PROPERTIES:

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

SECTION 10 STABILITY AND REACTIVITY

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

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: Not applicable
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

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

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

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

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

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

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

Acute Toxicity Estimate: Not Determined

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

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

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

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

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

ADDITIONAL TOXICOLOGY INFORMATION:

During use in engines, contamination of oil with low levels of cancer-causing combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water. This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).



SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

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

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY

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

POTENTIAL TO BIOACCUMULATE

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

SECTION 13 DISPOSAL CONSIDERATIONS

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

SECTION 14 TRANSPORT INFORMATION

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

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

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

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

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

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

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

REGULATORY LISTS SEARCHED:

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

The following components of this material are found on the regulatory lists indicated.
 Zinc alkyl dithiophosphate 03, 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), KECI (Korea), PICCS (Philippines), TSCA (United States). One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

NEW JERSEY RTK CLASSIFICATION:

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

SECTION 16 OTHER INFORMATION

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

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

LABEL RECOMMENDATION:

Label Category : ENGINE OIL 1 - ENG1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1,16
Revision Date: FEBRUARY 03, 2015

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number

ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

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

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

Safety Data Sheet – Barite



Section 1: Product and Company Identification

Product Identifier: Barite

Product Names: Barite, Baryte, Bar

Product uses: various industrial uses

Manufacturer:

Industrial Mineral Company
7268 Frasinetti Road
Sacramento, California 95828

Emergency Telephone Number: 916-383-2811

Telephone Number for Information: 916-383-2811

Section 2: Hazards Identification



Carcinogen



Irritant (skin and eye)

Skin Sensitizer

Respiratory Tract Irritant

OSHA/HCS status: This naturally occurring clay is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance of mixture: OSHA –Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity (Repeated Exposure) (Respiratory tract through inhalation) – Category 1

Exposure limits for Crystalline Silica: The current American Conference of Government Industrial Hygienist Threshold limit value for crystalline silica is: 0.1 mg/m³

Signal Word: Danger

Hazard Statement Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard. Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects. Can cause skin, respiratory, and eye irritation.

Precautionary Statement: Wear protective gloves, eye, and respiratory protection. Avoid breathing dust.

Section 3: Composition Information

Natural Occurring mineral, exact chemical composition varies.

Chemical Name	Common Name	CAS Number	%
Quartz (Silica)	SiO ₂	14808-60-7	10-12
Barite	BaSO ₄	13462-86-7	80-84
Mica/Illite	(K,Na,Ca)(Al,Mg,Fe) ₂ (Si,Al) ₄ O ₁₀ (OH,F) ₂	12001-26-2	<6
Calcite	CaCO ₃	13397-26-7	<2

Safety Data Sheet – Barite



Section 4: First-Aid Measures

Eye Contact: If eye contact occurs, rinse immediately with plenty of water. If irritation persists, seek medical attention

Skin Contact: Wash thoroughly with water. If irritation persists, seek medical attention

Inhalation: Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention

Ingestion: Consult physician and/or obtain competent medical assistance

Section 5 Fire Fighting Measures

General Fire Hazards: Not flammable

Extinguishing Media: Use appropriate extinguishing media for surrounding fire

Special Fire Fighting Procedure: None

Section 6: Accidental Release Measures

Clean-up Methods: When dust is generated it may over expose cleanup personnel to dust. Using respirators or wetting the material is recommended. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits

Personal Precautions and Personal Protective Equipment: Wear appropriate protective equipment and clothing during clean-up. If dusty conditions exist use approved respirators.

Environmental Precautions: Material is a natural mineral product and will not cause adverse effects to the water system other than turbidity from suspended particles.

Section 7: Handling and Storage

Handling Procedures: Wear the appropriate eye protection and avoid dust contact with eyes. Minimize dust generation and accumulation. Wear the appropriate respiratory protection when in poorly ventilated areas. Use good industrial hygiene practices.

Section 8: Exposure Controls/Personal Protection

Airborne Exposure Limits:

Silica component limit

OSHA PEL: TWA 10 mg/m³ (respirable)

OSHA PEL : TWA 30 mg/m³ (total dust)

CAL OSHA PEL: TWA 0.1 mg/m³ (respirable)

CAL OSHA PEL: TWA 0.3 mg/m³ (total dust)

Engineering Measures: Use local exhaust ventilation to control exposure below applicable limits

Personal Protective Equipment (PPE):

Respiratory: Avoid actions that cause dust exposure to occur. Use local or general ventilation to control exposures below applicable exposure limits. NIOSH or MSHA approved particulate filter respirators should be used. Respirator and/or filter cartridge selection should be based on the ANSI Standard Z88.2.

Safety Data Sheet – Barite



Eyes: When working around activities where dust can contact the eyes, wear safety glasses or goggles to avoid eye irritation or injury. Wearing contacts without sealing goggles is not recommended.

Skin and Body: Protective Clothing is not essential

Section 9: Physical and Chemical Properties

Appearance: Tan to grey Physical state: Powder pH: 8 Melting/Freezing Point: no data available Evaporation Rate: NA Vapor Pressure (mm HG): 0 (approximately) Relative density: NA Solubility in water at 100 C: 0 (approximately) Decomposition temperature: no data available Viscosity: NA	Odor: none Odor threshold: No data Available Flashpoint: NA Boiling Point: NA Flammability: Not Flammable Vapor Density: NA Specific Gravity: 4.1 Partition coefficient: No data available Auto-ignition temperature: NA
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Section 10: Stability and Reactivity

Reactivity: No dangerous reactions are known under normal conditions of use

Chemical Stability: Stable

Possibility of Hazardous Reactions and Conditions to Avoid: None known

Incompatibility: None Known

Section 11: Toxicological Information

Possible Health Effects:

Target Organs: Skin, Eyes, and Respiratory system

Exposure Routes: Inhalation, skin or eye contact

Symptoms:

Short Term: Shortness of breath and/or coughing associated with dust inhalation.

Long Term Exposure (Chronic): Steady and prolonged exposure to dust concentrations high than LTV without approved respirator could cause silicosis, a chronic disease of the lungs marked by acute fibrosis, may cause cancer based on animal data.

Effects of Silicosis

Bronchitis/chronic obstructive Pulmonary Disorder

Increased susceptibility to Tuberculosis

Scleroderma

Possible Renal

Symptoms of Silicosis

Shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough, respiratory failure, death.

OSHA, IARC, and NTP Carcinogen Classifications				
Chemicals with recognized Carcinogen Potential	CAS#	OSHA	IARC	NTP

Safety Data Sheet – Barite



Quartz (Crystalline Silica)	14808-60-7	Yes	Yes – Group 1	Yes
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Section 12: Ecological Information

Eco toxicity: None Known
Biochemical oxygen demand (BOD5): None known
Chemical oxygen demand (COD): None known
Products of Biodegradation: None known
Toxicity of the products of biodegradation: None known
Bioaccumulation Potential: None known
Potential to move from soil to groundwater: None Know
Other adverse effects: None known

Section 13: Disposal Considerations

Personal Protection: Refer to section 8 for proper PPE when disposing of waste material
Appropriate disposal containers: No special requirements
Appropriate disposal methods: Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or local authority requirements.
Physical and chemical properties that may affect disposal: Dust should be minimized in disposal by either transporting in seal containers or wetting dust before transport
Sewage disposal: do not dispose of into sewage systems, material will settle out of water and clog pipes.
Special precautions for landfills or incineration activities: None

Section 14: Transport Information

Regulatory Information	UN Number	UN Proper Shipping Name	Transport Hazard Class	Packing Group Number	Bulk Transport Guidance	Special Precautions
DOT Classification	Not Regulated	-	-	-	-	-
TDG Classification	Not Regulated	-	-	-	-	-
ADR/RID Class	Not Regulated	-	-	-	-	-
IMDG Class	Not Regulated	-	-	-	-	-
IATA-DGR Class	Not Regulated	-	-	-	-	-

Section 15 Regulatory Information

TSCA – Toxic Substances Control Act – EPA Quartz and other chemicals are listed in the TSCA Chemical Substance Inventory

Safety Data Sheet – Barite



California Prop. 65 WARNING: This product contains a chemical known to the State of California to cause cancer. (Prop. 65 – California Health and Safety Code Section 2549 Et Seq)

SARA/Title III (Emergency Planning & Community Right-to-Know Act) This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16: Other Information

Definitions

ASTM – American System of Testing and Materials

OSHA – Occupational Safety & Health Administration

IARC – International Agency for Research on Cancer

NTP – National Toxicogmail.com

HCS – Hazardous Communication Standard

CAS – Chemical Abstract Service

ACGIH – American Conference of Governmental Industrial Hygienists

CAL-OSHA – California Occupational Safety & Health Administration

OSHA PEL – OSHA Permissible Exposure Levels

OSHA STEL - spot exposure for a duration of 15 minutes, which cannot be repeated more than 4 times per day with at least 60 minutes between exposure periods.

TLV – Threshold Limit Value

TWA – Time Weighted Average

TLV-TWA – Time weighted average Threshold limit value

TLV-STEL – Short-term exposure limit Threshold limit value

TLV-C – Ceiling Limit – absolute limit that should not be exceeded at any time

Revisions: Existing MSDS revised to new GHS format. Revision Date 08/31/2015

The information presented herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so, nothing here in is to be construed as recommending any practice or product in violation of any patent, law, or regulation. It is the user's responsibility to determine the suitability of any material for a specific purpose and to adopt such safety precautions as may be necessary. We make no warranty as to the results to be obtained in using any material and, since conditions of use are not under our control, we must necessarily disclaim all liability with respect to the use of any material we supply.