2012 ANNUAL ACTIVITY
AND
MONITORING UPDATE

March 27, 2013

MINING IN HARMONY WITH ENVIRONMENT

Photo by Judy Patrick

Discussion Summary

- Monitoring Results
- Compliance Discussion
- Significant Achievements
- Permit Update
- Other Activities

Monitoring Results

Summary of Water Usage for Temporary Water Use Permits (TWUP)

2012 Monthly Total Flows

Month	TWUP 2011-131 RTP Seepage Collection System Wells #5-8	TWUP 2011-131 RTP Seepage Collection System Well #9	TWUP 2011-76 Rosa Creek, Caribou Creek, Gilles Creek, Shaw Creek	TWUP 2011-130 Diversion Ditches
	(gallons)	(gallons)	(gallons)	(acre-feet)
January	6,184,324	2,824,136	Water withdrawn by contractor, Delta Concrete, for road maintenance	Annual Calculated Amount
February	5,579,155	252,847		
March	4,806,148	1,919		
April	3,416,826	1,956		
May	3,315,075	304,058		
June	4,070,044	651,486		
July	5,767,541	3,977,866		
August	6,394,643	4,017,654		
September	6,129,614	2,232,331		
October	6,305,498	2,431,508		
November	5,542,969	2,976		
December	4,153,204	1,768		
Subtotal	**61,665,038**	**16,700,505**		
Total	**78,365,543 gallons**		**357,000 gallons**	**1,300 acre-feet**
Permit Limit	**1,945,000,000 gallons**		**14,400,000 gallons**	**404.63 acre-feet**

Summary of Water Usage for Permits To Appropriate Water

2012 Monthly Total Flows

Month	LAS 24616 Surface Water Collected in Recycle Tailings Pond (RTP)	LAS 24617 Groundwater from Underground Mine Discharged to ORTW	LAS 24617 Groundwater from Underground Mine Recycled Underground	LAS 24613 Goodpaster River ORTW Influent	LAS 24611 Drinking Water Wells DW02 & DW03	LAS 24612 Gravel Pit Pond
	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)
January	5,876,811	15,318,368	2,460,038	346,379,005	703,593	Water withdrawn by Pogo and by contractor, Delta Concrete, for road maintenance
February	4,447,433	12,704,228	2,634,976	243,434,826	716,767	
March	5,384,362	14,582,905	1,778,649	303,735,195	735,374	
April	3,998,460	12,423,523	2,852,865	202,024,800	736,815	
May	8,441,393	10,554,276	2,767,816	267,110,064	765,626	
June	11,754,433	10,448,319	2,958,761	321,025,453	783,982	
July	13,835,783	14,237,086	3,138,897	303,791,087	748,846	
August	14,802,201	13,173,388	1,121,036	310,117,555	785,925	
September	10,436,689	15,734,063	2,639,456	305,500,419	705,986	
October	9,698,228	16,386,805	2,615,556	257,266,467	802,222	
November	8,728,541	16,504,361	1,857,251	230,193,838	761,962	
December	8,702,678	14,716,627	842,181	191,546,175	768,522	
Total (gallons)	**106,107,013**	**166,783,949**	**27,667,483**	**3,282,124,884**	**9,015,619**	**1,262,400**
Total in Acre-ft	**326**	**512**	**85**	**10,072**	**28**	**4**
Permit Limit Acre-ft	**387.12**	**395.19**		**24,195.11**	**81.77**	**241.95**

Issue: Pogo used > 395 acre-ft of water under Water Right LAS24617 for the use of groundwater from an underground mine

2012 Monthly Total Flows

Month	LAS24617 Discharged to ORTW	LAS 24617 Recycled Underground
	(gallons)	(gallons)
January	15,318,368	2,460,038
February	12,704,228	2,634,976
March	14,582,905	1,778,649
April	12,423,523	2,852,865
May	10,554,276	2,767,816
June	10,448,319	2,958,761
July	14,237,086	3,138,897
August	13,173,388	1,121,036
September	15,734,063	2,639,456
October	16,386,805	2,615,556
November	16,504,361	1,857,251
December	14,716,627	842,181
Total	**166,783,949**	**27,667,483**
Total in Acre-ft	**512**	**85**
Permit Limit Acre-ft	**395**	

Pogo self-reported to ADNR on December 13, 2012.

Solution: Pogo submitted TWUP2013-023 on January 15 for an additional 1,613.3 acre-feet of water per year.

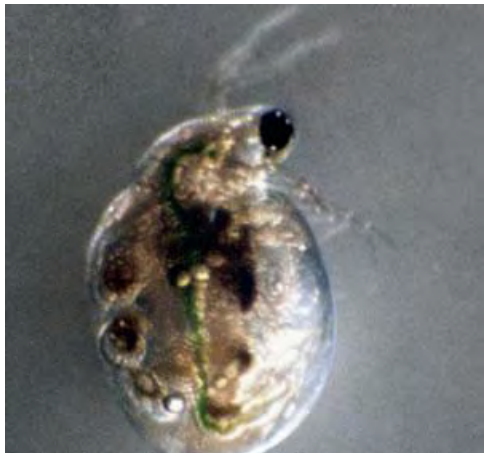
The Goodpaster River is monitored in four locations.

Photo by Judy Patrick

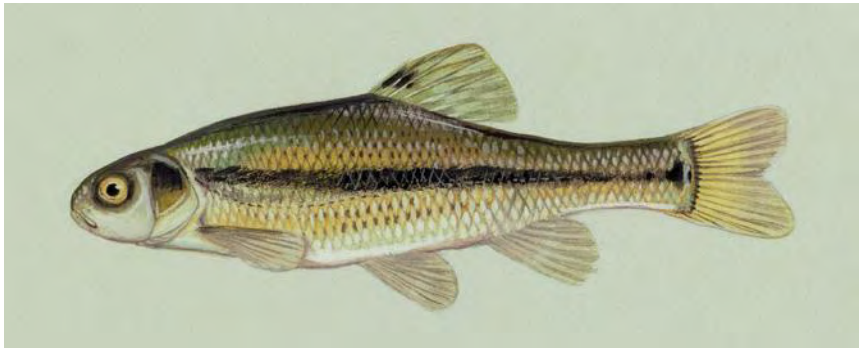
2012 Results are all within Permit Limits.

Whole Effluent Toxicity Testing

- Annual Whole Effluent Toxicity (WET) Testing took place in July. Water being discharged into the Goodpaster River was sent to the lab for biological assay.
- Water fleas and Fat Head minnows were grown in different concentrations of effluent to see how it affected growth and death rates. All results were within permit limits.



Ceriodaphnia dubia



Pimephales promelas

Fish Tissue Sampling in late September 2012

- Chinook salmon fry are collected annually and analyzed for metals content.
- 15 fish are collected in minnow traps upstream and 15 downstream of the mine.
- 10 individual tests
- 5 to composite test

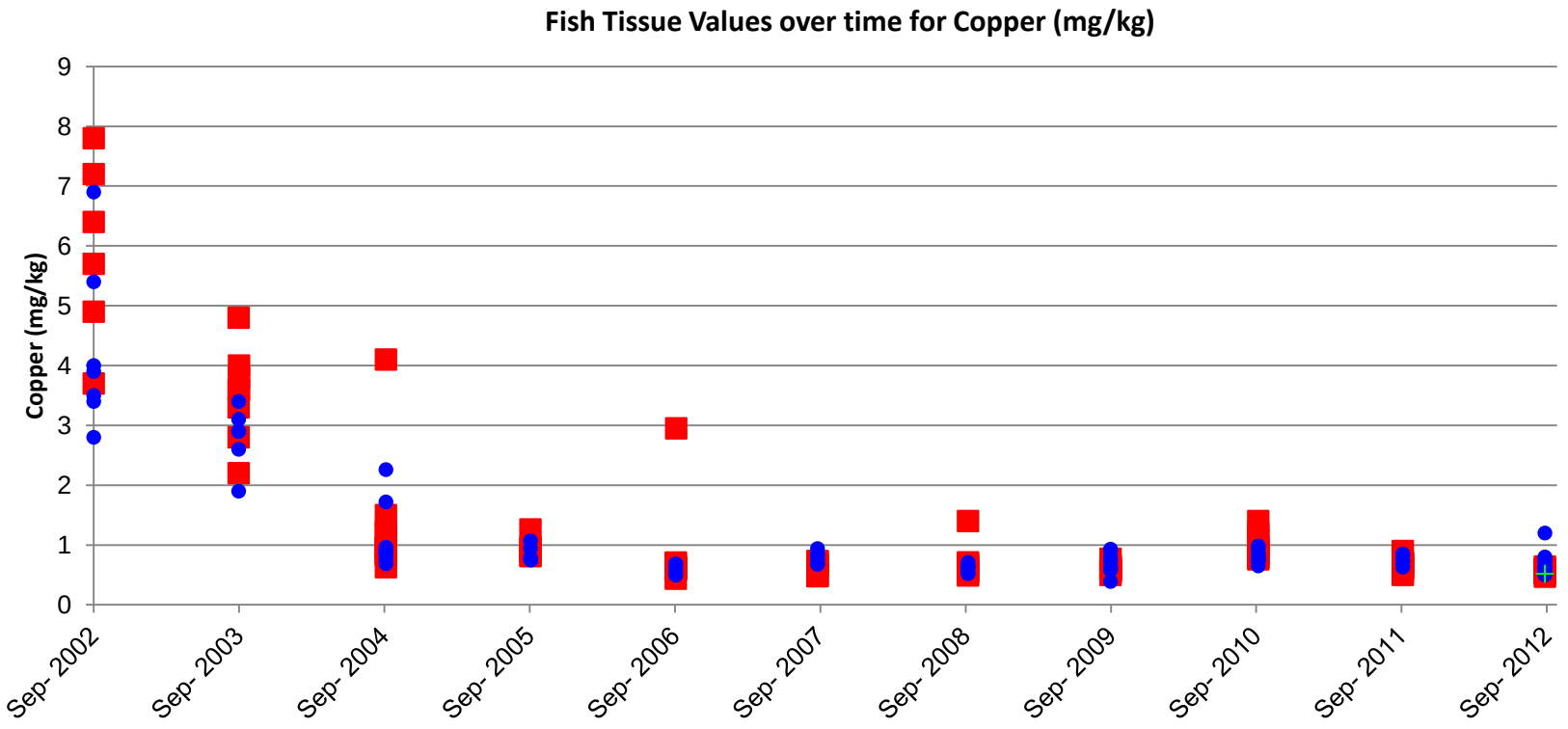
Juvenile Chinook *(Oncorhynchus tshawytscha)*

Slimy Sculpin are also collected and analyzed for metal content. Only one Sculpin was caught this year.

Juvenile Burbot (*Lota lota)*

Extra salmon fry are measured and released back into the river.

Fish Tissue Sampling Results



● Upstream ■ Downstream + Sculpin Upstream

Mill began production in 2006. Pogo did not start discharging until 2007.

Goodpaster River Arctic Grayling Study

Fish were caught, tagged, measured and released!

In summer 2012, ADFG re-evaluated the fish population at Pogo's request to update Baseline Studies conducted near Pogo in 2003-2004.

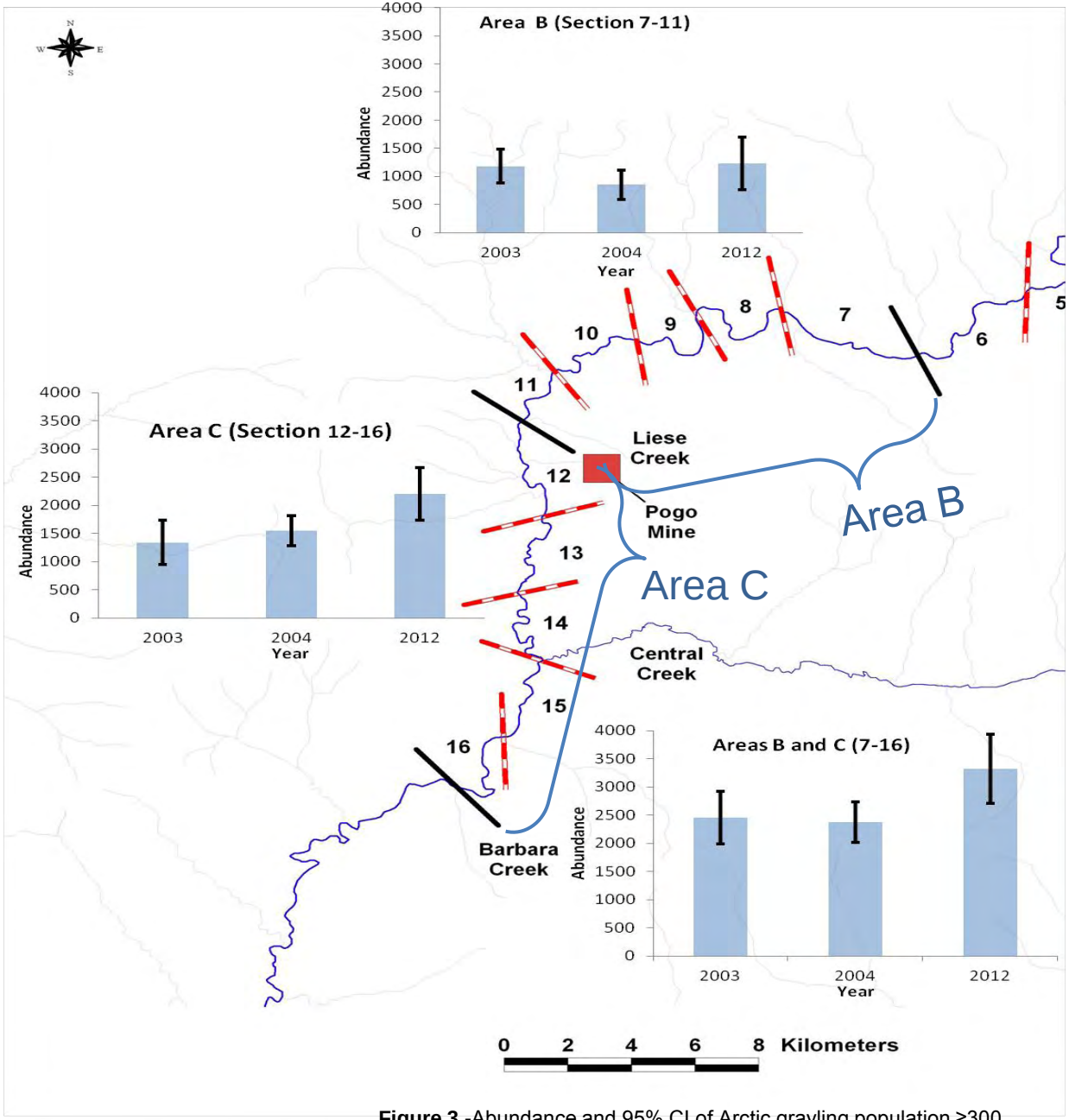
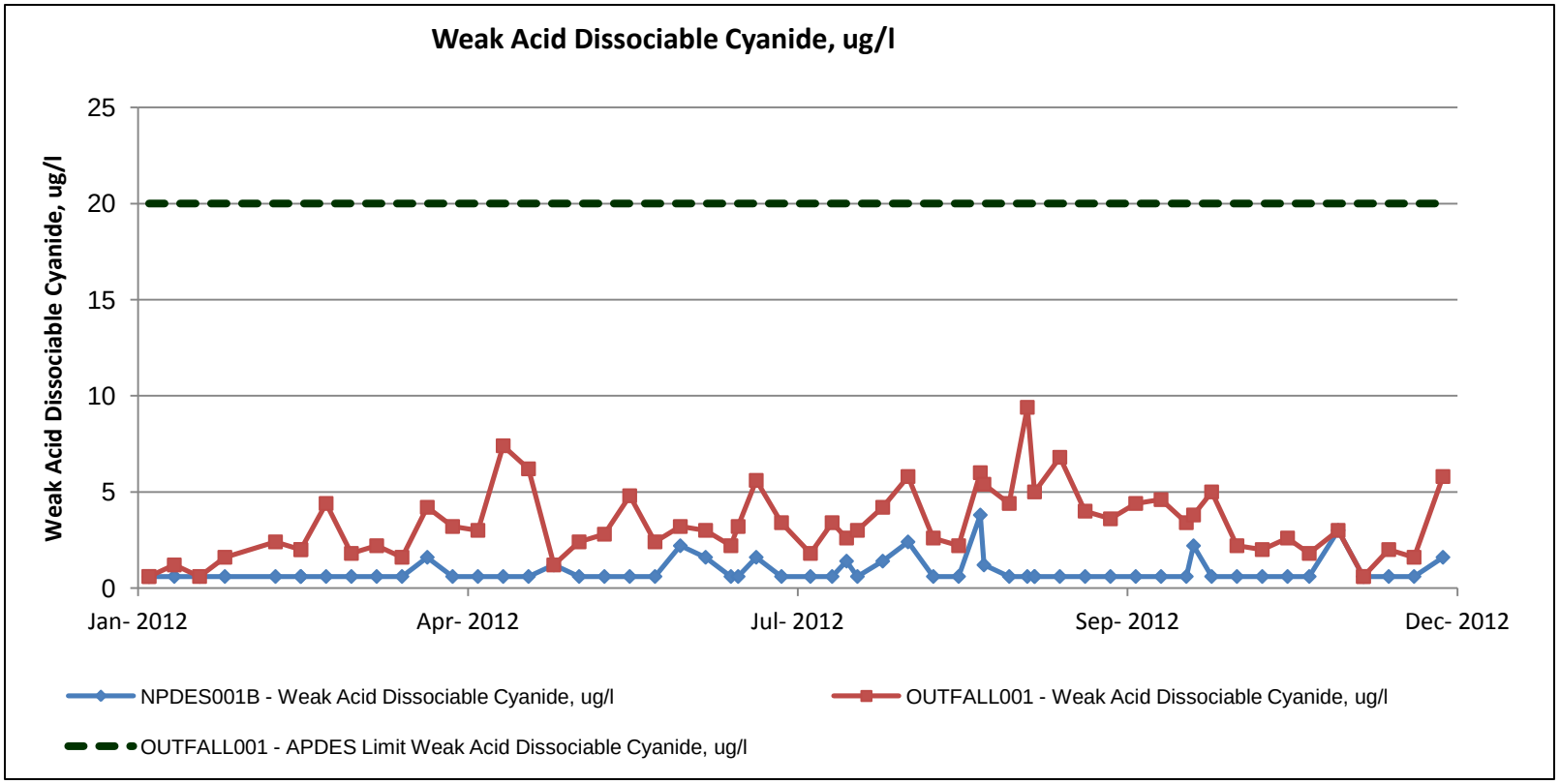


Figure 3.-Abundance and 95% CI of Arctic grayling population ≥300 mm FL by Areas B, C, and B and C during 2003, 2004, and 2012.

Compliance Discussion

2012 WAD CN


Weak Acid Dissociable Cyanide, ug/l
Weak Acid Dissociable Cyanide, ug/l
25
20
15
10
5
0
Jan- 2012
Apr- 2012
Jul- 2012
Sep- 2012
Dec- 2012
NPDES001B - Weak Acid Dissociable Cyanide, ug/l
OUTFALL001 - Weak Acid Dissociable Cyanide, ug/l
OUTFALL001 - APDES Limit Weak Acid Dissociable Cyanide, ug/l

2011 NOV and 2012 Compliance Order by Consent (COBC)

- On December 1, 2011 Pogo Received Notice of Violation (NOV) for APDES Permit violations in 2011.
- On January 5, 2012 Pogo Responded to Notice of Violation.
- On February 21, 2012 Pogo Received Draft COBC from ADEC.
- On March 16, 2012 Pogo Returned Draft COBC to ADEC.
- On May 9, 2012 Pogo and ADEC Finalized COBC.
- On June 12, 2012 Pogo paid fine of $8,360.

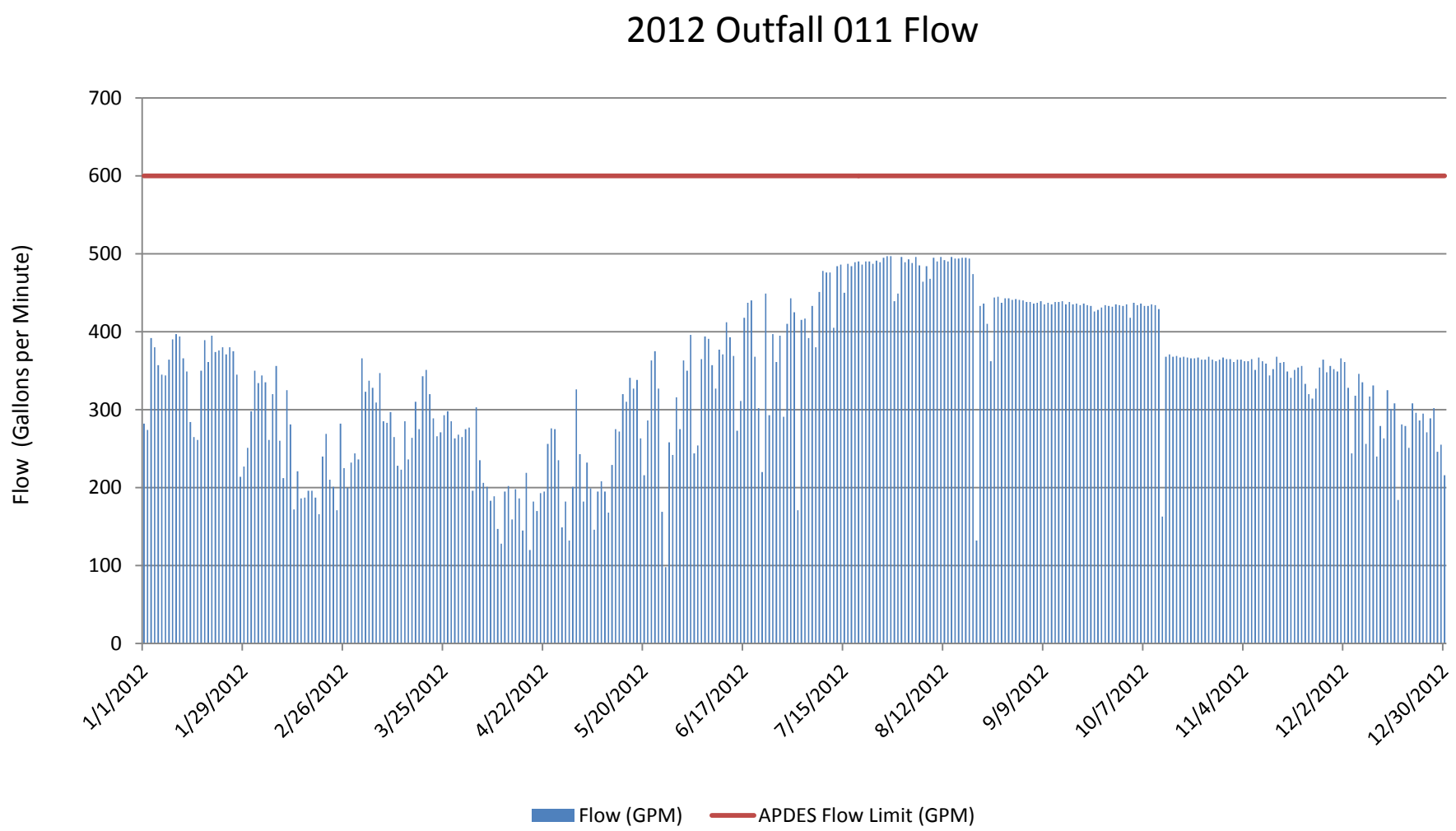
Compliance Order by Consent

Required Corrective Action Number One:

A. Waste Water Treatment Plant #2 (MWTP#2): Conduct two engineering studies to, first, determine the feasibility of increasing plant throughput from 300 to 600 gpm utilizing existing equipment; and second, to evaluate the benefits and drawbacks associated with a spectrum of available treatment options for increasing plant throughput to 600 gpm.

i. July 2, 2012: Preliminary results of the first study. Submitted Report 6/27/12
ii. August 31, 2012: Completion of first study. Submitted Report 8/31/12
iii. December 31, 2012: Preliminary results of the second study. *Submitted Report 12/26/12*
iv. April 30, 2013: Completion of the second study. *Under development*
v. December 31, 2013: Increase the throughput to 600 gpm.

178.8 Million Gallons Treated and Discharged




ORTW
Discharge Line
WTP #2 to ORTW
Airstrip
Mill
New 2150 Portal
Lower
Camp
1690
Portal
Camp/Admin/Shop
RTP
1525
Portal
1875
Portal
Drystack
WTP#2
Access
Road

Pogo Also Added Two Sand Filters to Mine Water Treatment Plant #2 (MWTP#2)

Intent was to increase treatment throughput.

Pogo upgraded 9,500 feet of ORTW Line

Section behind MWTP#2

Intent was to increase discharge rate to Off River Treatment Works (ORTW)

Compliance Order by Consent

Required Corrective Action Number Two:

A. Sewage Treatment Plant (STP): Pogo replaced the UV system in late 2011 to address the fecal coliform exceedances. In addition, Pogo will voluntarily develop a plan for increasing plant throughput from 25,000 to 40,000 gpd.

i. *July 2, 2012: Completion of Design Plan.* Submitted 5/14/12.
August 1, 2012: ADEC will complete a design plan review. Design Approved 7/11/12.

i. *December 31, 2012: Increase throughput of STP to 40,000 gpd.* Interim Approval to Operate Received 10/19/12.

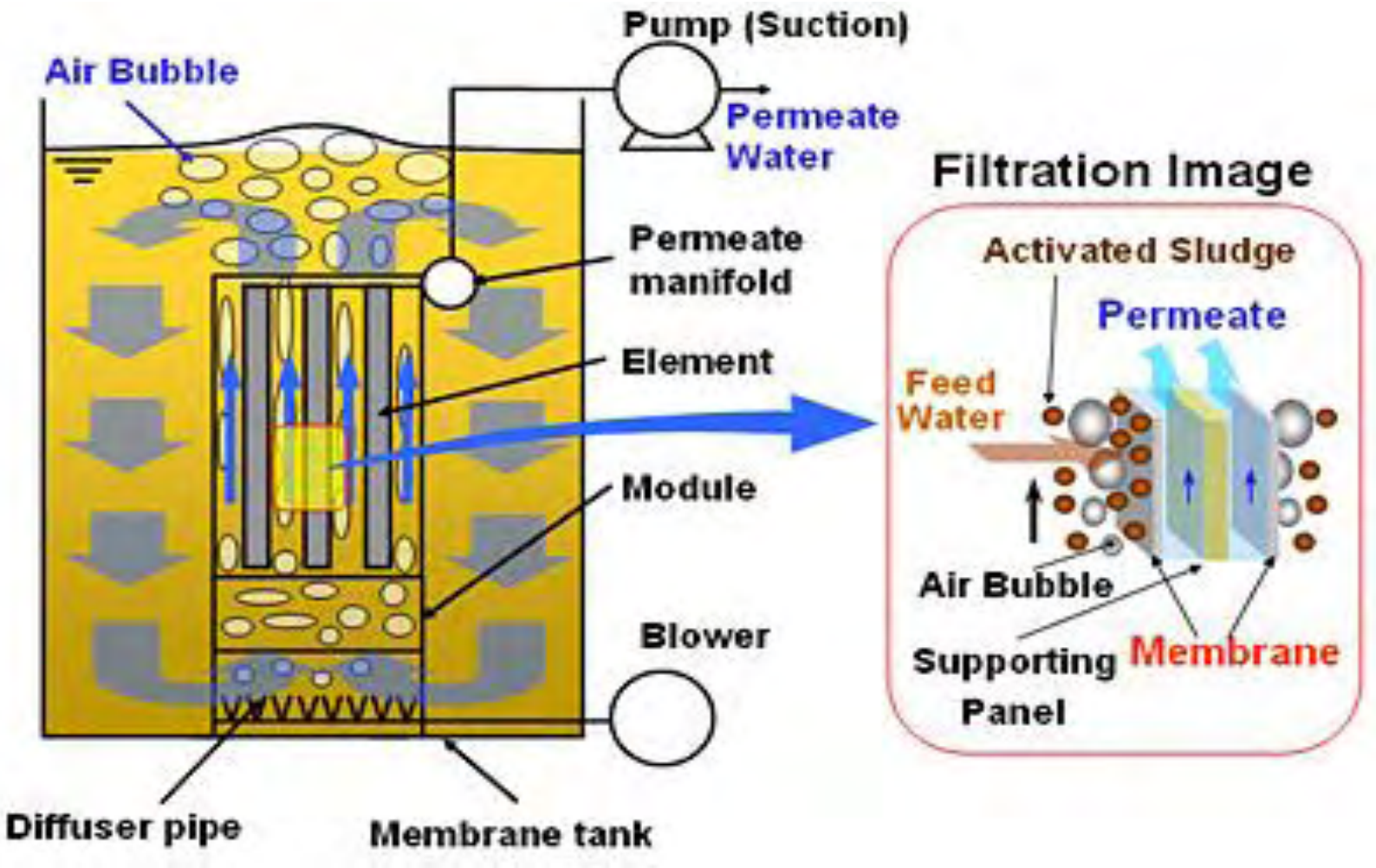
Summary of Upgrades to STP

- Replaced UV system in 2011.
- Upgraded to a Membrane Bioreactor (MBR) in 2012
- Added an additional rotor screen in 2012.

Since Pogo installed new UV system in 2011, Outfall 002 Fecal Coliform levels have been < 9 CFU/100 mL or No Detect.

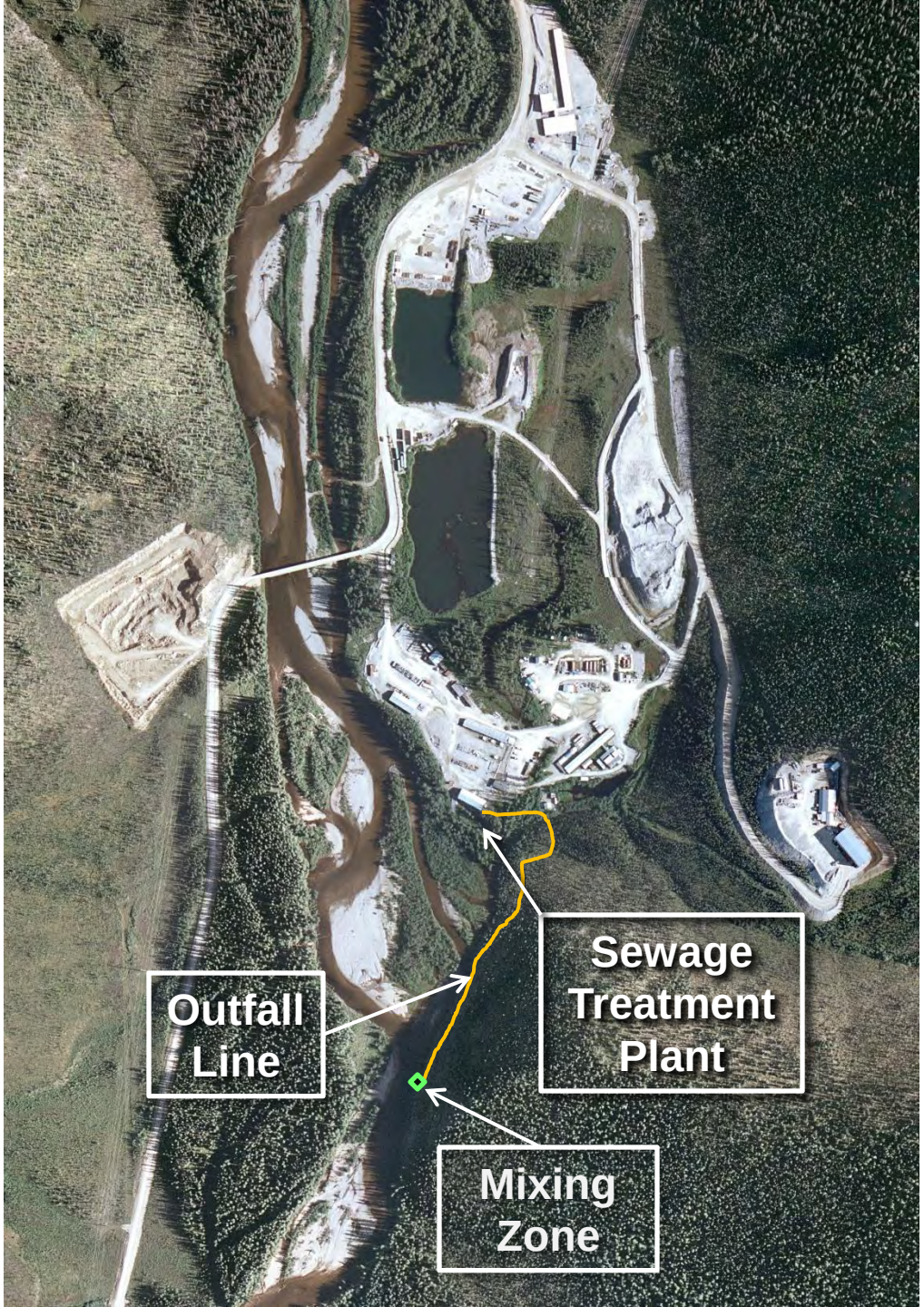
Actual MBR Installed at Pogo STP

Membrane Bio Reactor Cycle



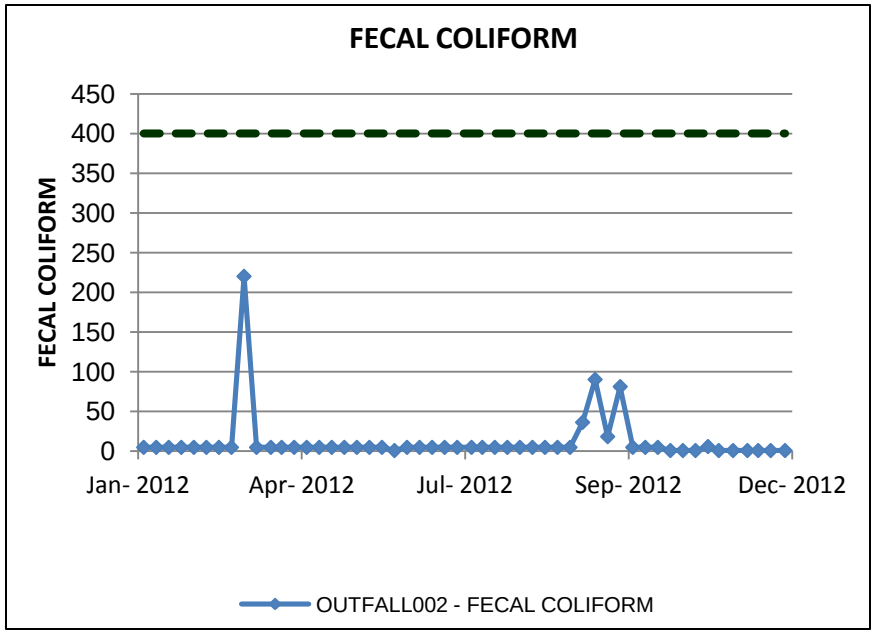
Installed Additional Rotary Screen

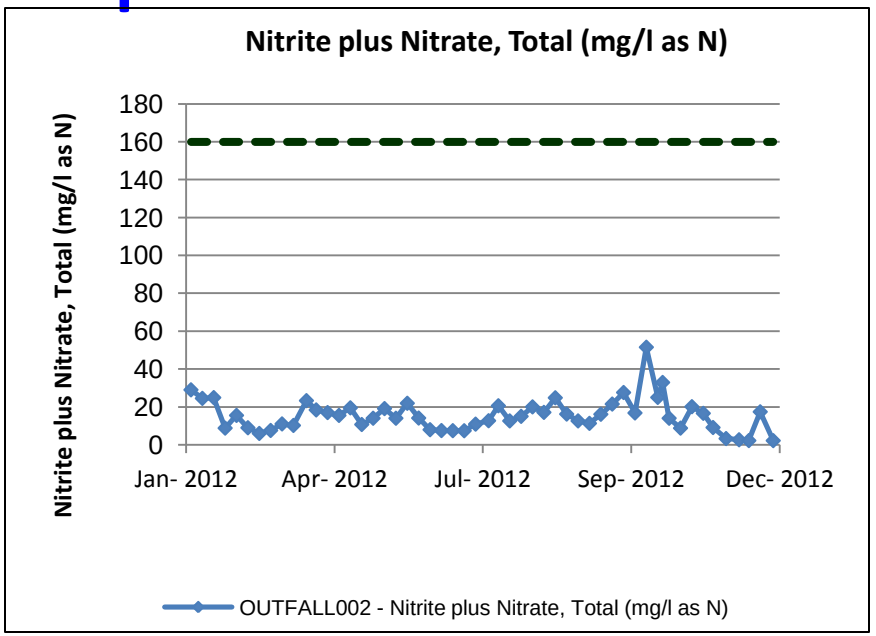
OUTFALL 002



STP DISCHARGE

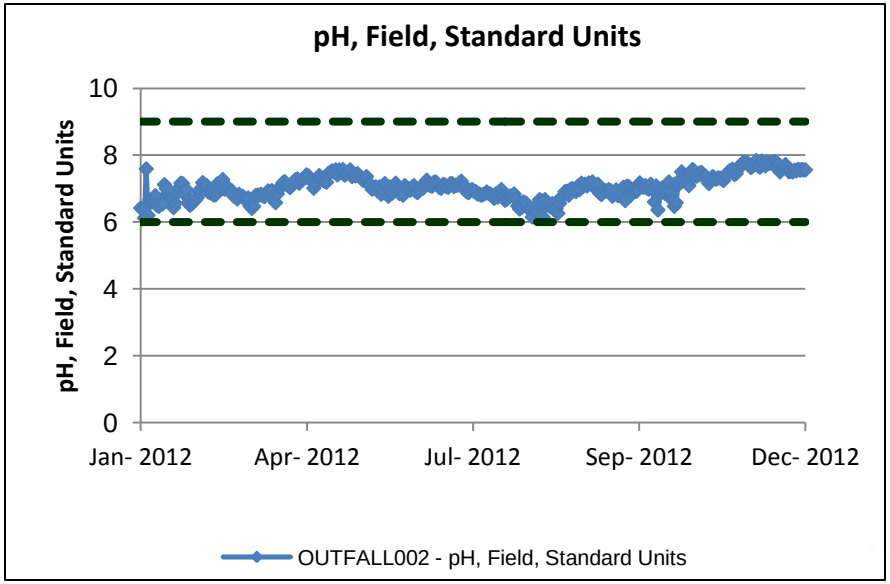
Outfall 002 Sample Results





Other parameters monitored include:

- BOD
- Dissolved Oxygen
- Flow
- TSS



Compliance Order by Consent (COBC)

Required Corrective Action Number Three:

A. Recycled Tailings Pond (RTP) Seepage: Develop a dam seepage grouting plan based upon the results of electromagnetic imaging.

i. *May 1, 2012: Complete dam seepage grouting plan.* Submitted 5/1/12.
May 31, 2012: By ADEC will provide feedback. Approved 5/23/12.

ii. *September 30, 2013: Complete grouting project.* Scheduled for March 2013. Pogo tried to complete in 2012 but there was too much rain.

Pogo obtained *Certificate of Approval to Repair a Dam* from ADNR on May 23, 2012. It requires that Pogo commence grouting by June 1, 2013.

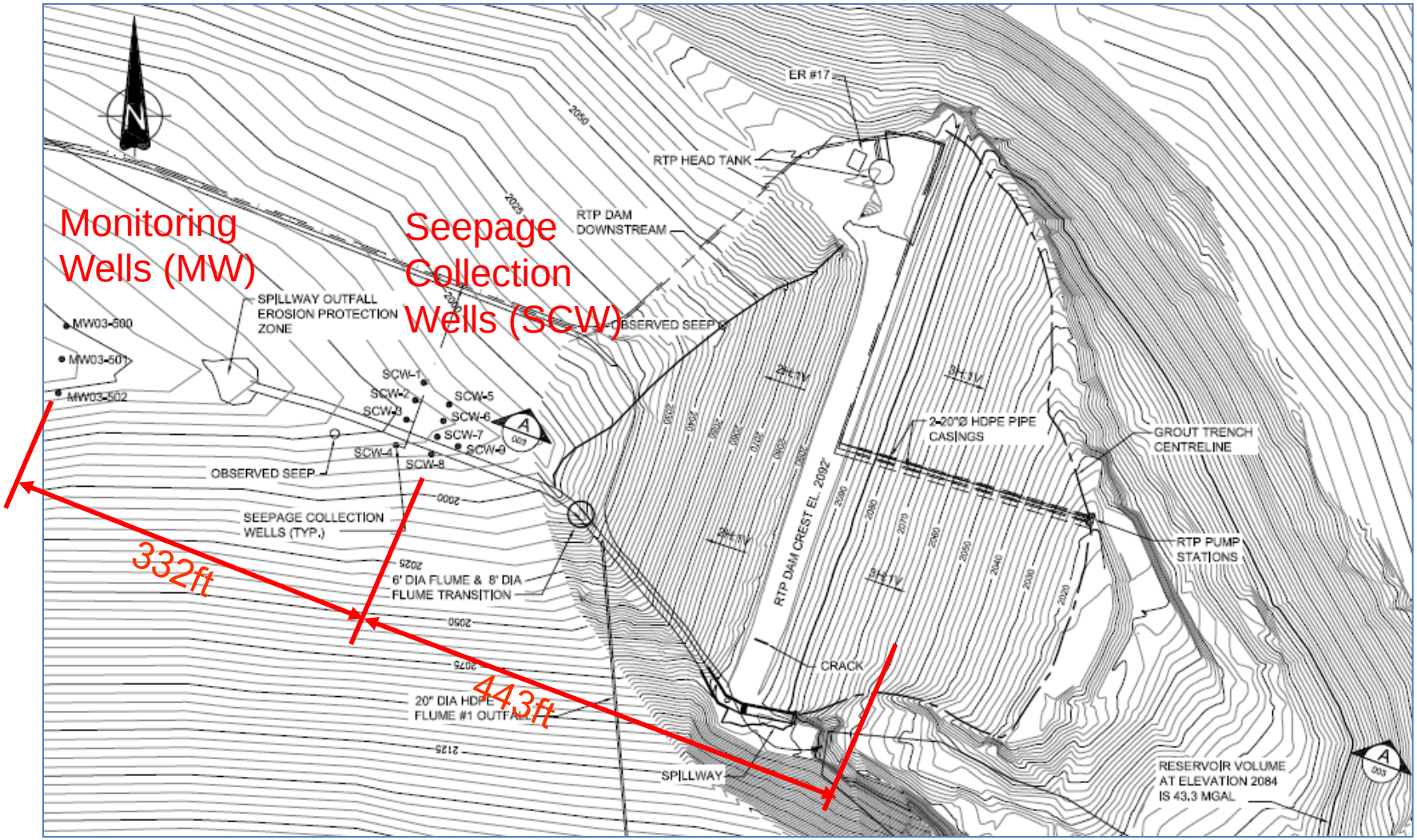
Significant Achievements

Pogo Poured 2 Millionth Ounce!



- Upgraded Recycle Tailings Pond (RTP) Compliance Wells
- Drystack Tailings Facility (DSTF) Expansion to 20 Mtons - 70% complete
- Initiated Hydrology Study for East Deep Expansion
- Initiated Baseline Studies for Hill 4021
- Initiated DSTF Closure Study update

Upgraded Three Compliance Wells

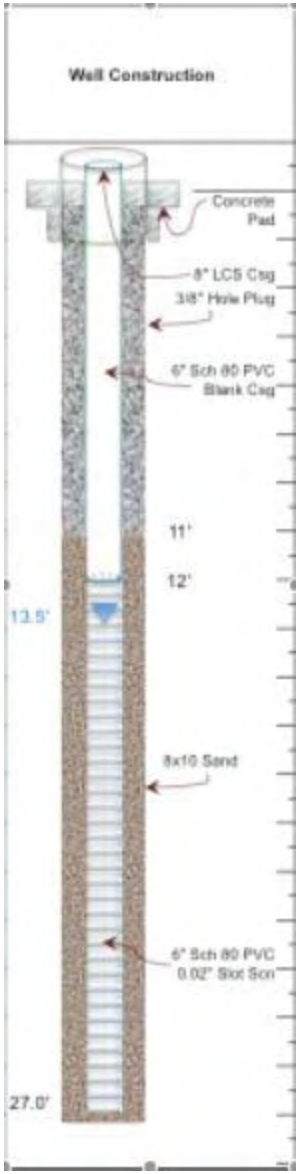


Upgraded Three Compliance Wells

Purpose of Wells is to monitor groundwater down-gradient of the RTP.

- Existing wells were exploration core holes converted into monitoring wells
- MW03-501 collapsed at 36ft in the 53 ft well.
- Existing wells were properly plugged and abandoned in October 2012.
- New wells drilled in October 2012 with a Boart Longyear Sonic Drill Rig.
- ADEC requested that the new wells be completed in the alluvium above the alluvium/bedrock contact.
- New wells will be developed until alluvial sand and silt entrained in the sand pack during completion is gone.
- New wells will be sampled monthly to establish background.

Sonic Rig at MW12-502



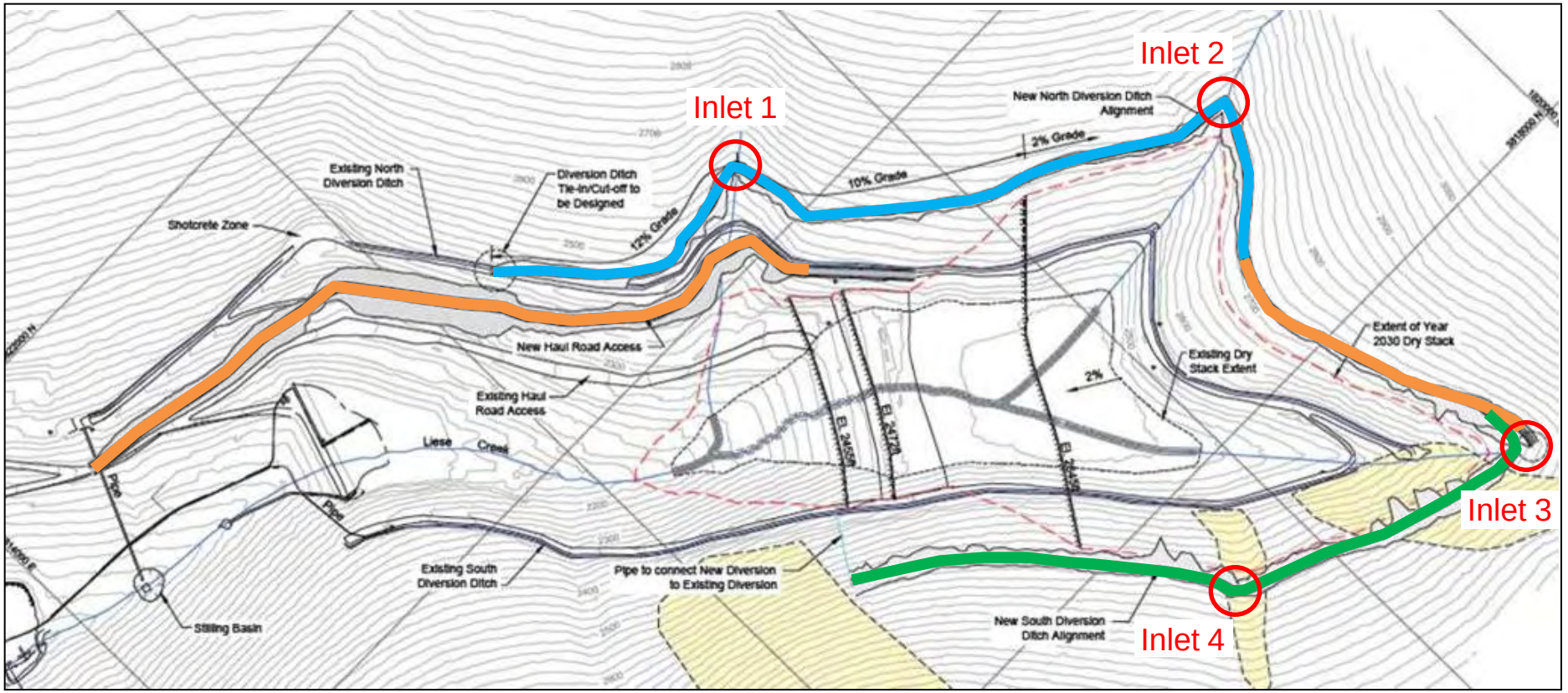
Update on Dry Stack Tailing Facility (DSTF) Expansion

DSTF Before Expansion

DSTF During Expansion on July 31

DSTF as of May 2012

2012 Construction Activities



- Shotcrete completed
- Civil work completed
- Pioneer road completed

- North Diversion Ditch: 5,800ft x 10ft wide
- South Diversion Ditch: 3,000ft x 10ft wide
- New Haul Road: 4,000 ft x 33ft wide

Pioneer Road Construction

North Ditch Construction

North Ditch Road Bed Construction

North Ditch Shotcrete

Placing shotcrete from STA 41+50 to 42+40

New Haul Road October 2012

Unsuitable Materials

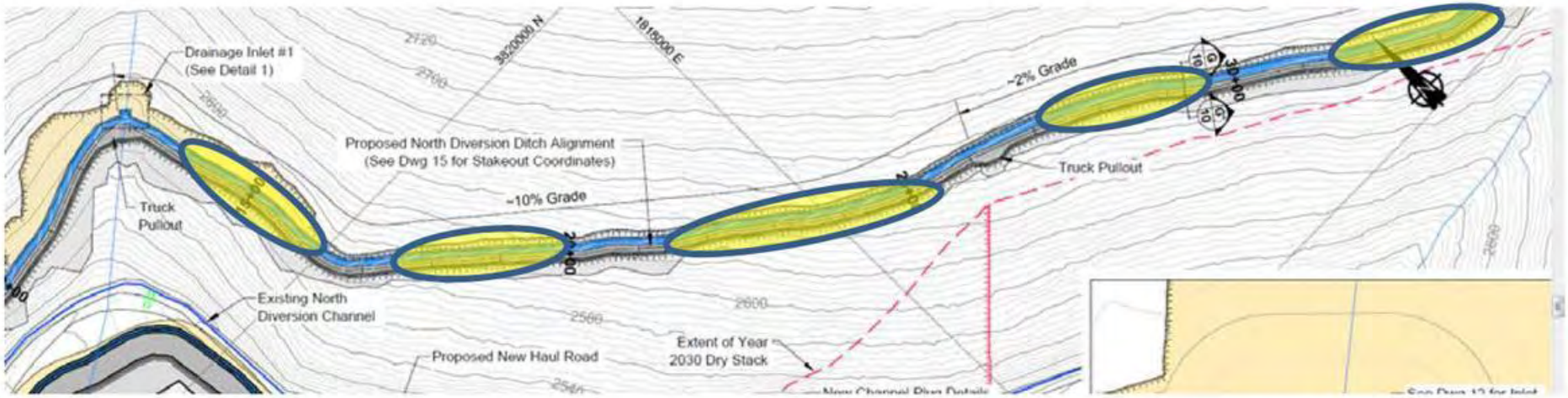


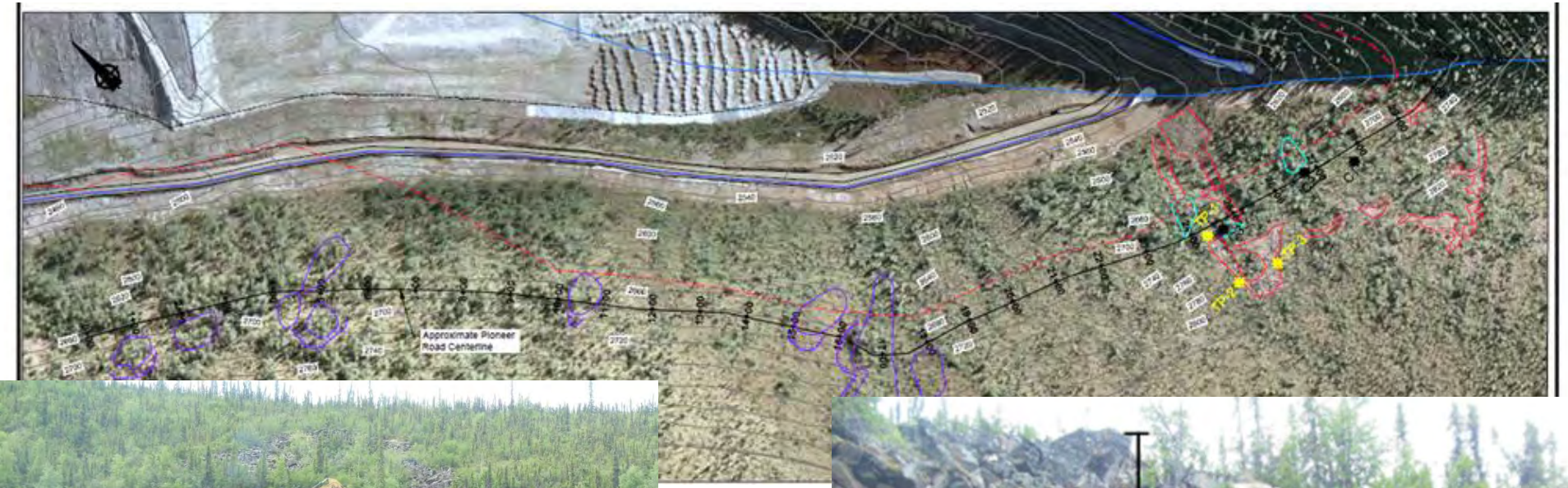
Figure 1: Approximate Segments of Observed Frozen Material along North Diversion alignment.

Unsuitable Materials

Initially unsuitable material was hauled to airstrip

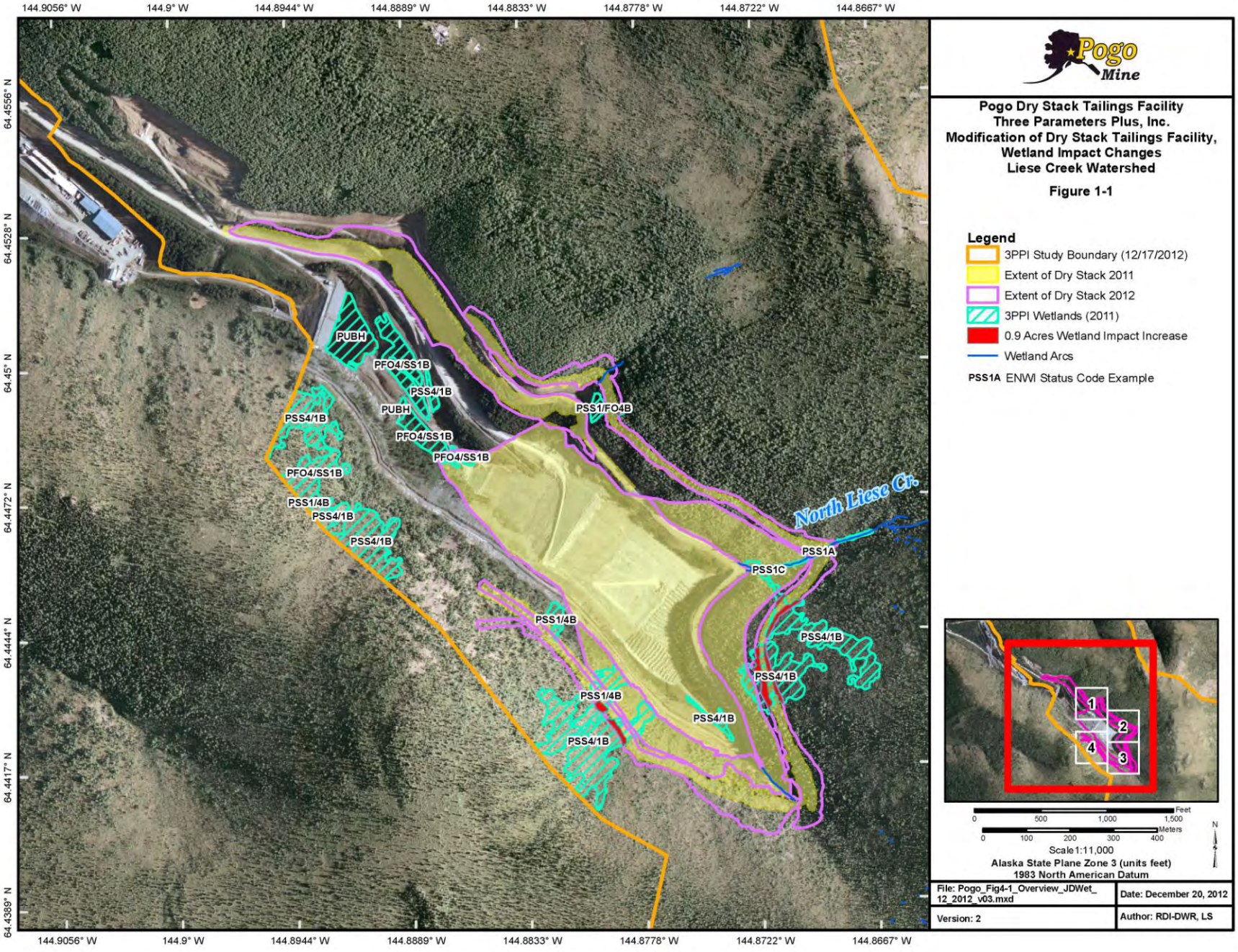
Following discussion with Alaska Forestry, it was decided to use material to cover slash immediately beyond the fill

Talus Area – Geotechnical Investigation



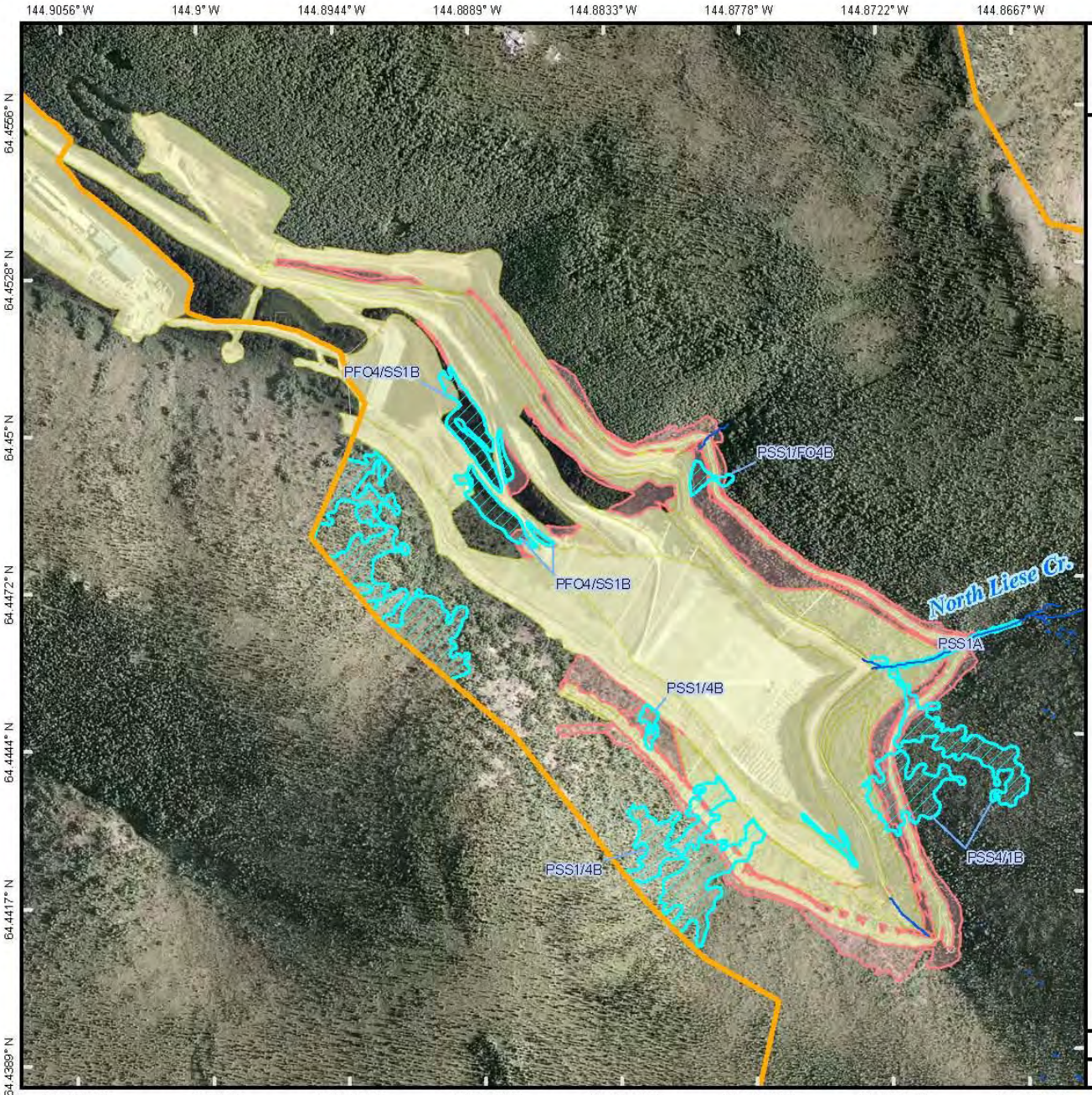
Issue: 2012 DSTF Expansion impacted an additional 0.9 acres of Wetlands

Pogo self-reported to COE.


144.9056° W
144.9° W
144.8944° W
144.8889° W
144.8833° W
144.8778° W
144.8722° W
144.8667° W
64.4556° N
64.4528° N
64.45° N
64.4472° N
64.4444° N
64.4417° N
64.4389° N
PUBH
PFO4/SS1B
PSS4/1B
PUBH
PSS4/1B
PFO4/SS1B
PFO4/SS1B
PFO4/SS1B
PSS1/4B
PSS4/1B
PSS4/1B
PSS1/FO4B
North Liese Cr.
PSS1A
PSS1C
PSS1/4B
PSS4/1B
PSS4/1B
PSS1/4B
PSS4/1B
PSS4/1B
Pogo Mine
Pogo Dry Stack Tailings Facility
Three Parameters Plus, Inc.
Modification of Dry Stack Tailings Facility,
Wetland Impact Changes
Liese Creek Watershed
Figure 1-1
Legend
3PPI Study Boundary (12/17/2012)
Extent of Dry Stack 2011
Extent of Dry Stack 2012
3PPI Wetlands (2011)
0.9 Acres Wetland Impact Increase
Wetland Arcs
PSS1A ENWI Status Code Example
1
2
3
4
Feet
0
500
1,000
1,500
Meters
0
100
200
300
400
N
Scale 1:11,000
Alaska State Plane Zone 3 (units feet)
1983 North American Datum
File: Pogo_Fig4-1_Overview_JDWet_12_2012_v03.mxd
Date: December 20, 2012
Version: 2
Author: RDI-DWR, LS

Solution: Pogo submitted 2013 Modification to 404 Permit for 2.8 acres Wetland Impact on Jan 25.

- 0.9 acres for 2012 Disturbance
- 1.9 acres for Buffer between Ultimate DSTF and new Diversion Ditch



Pogo Mine

Pogo Dry Stack Tailings Facility
Three Parameters Plus, Inc.
Modification of Dry Stack Tailings Facility, Liese Creek Watershed

Figure 4.1

Legend

- Wetland Arcs
- 3PPI Wetlands (2011)
- 2013 Permitting
- Previously Permitted
- 3PPI Study Boundary (12/17/2012)

PSS1A - ENWI Status Code Example

0 500 1,000 1,500 Feet
0 100 200 300 400 Meters
N

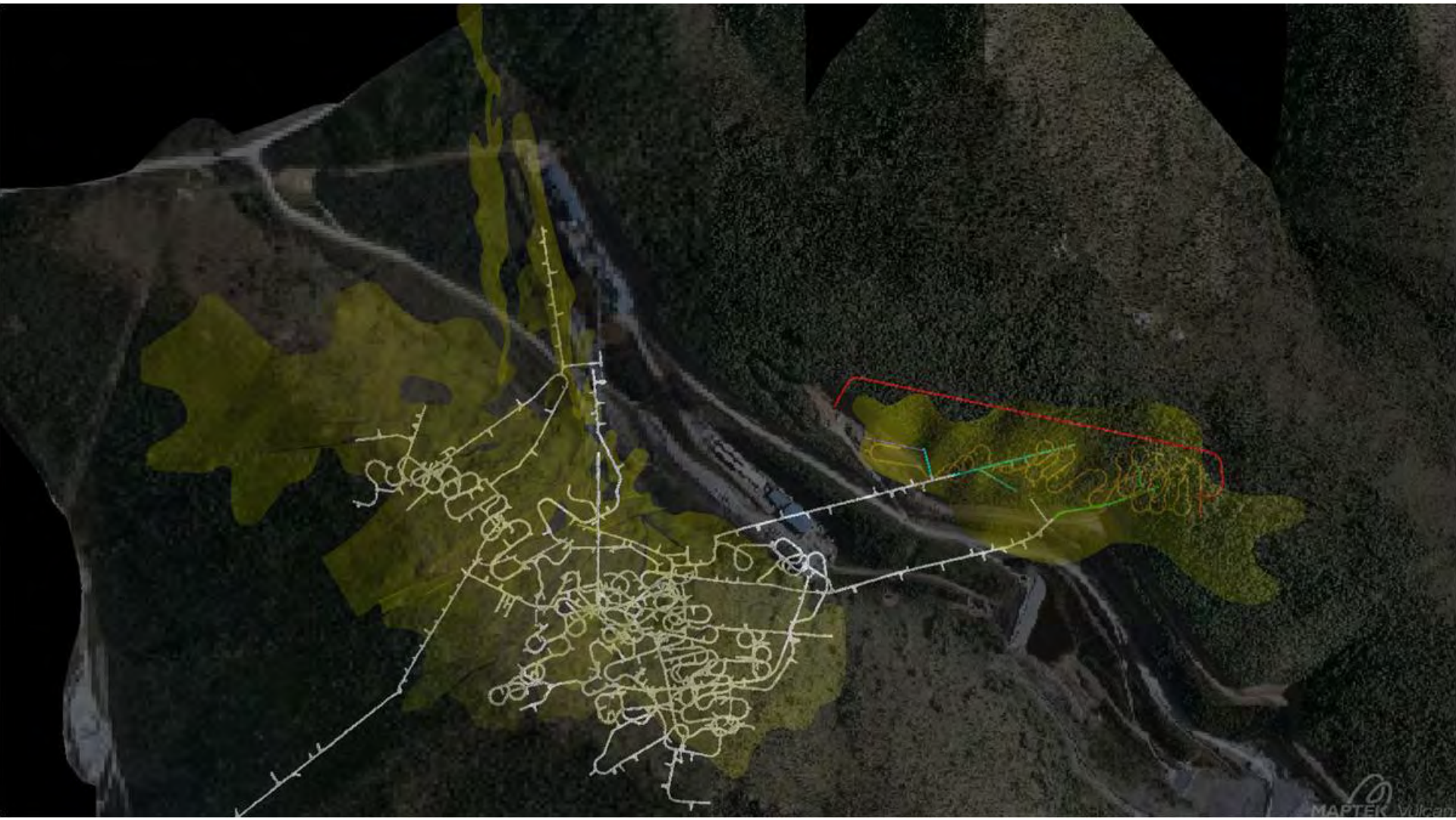
Scale1:11,000

Alaska State Plane Zone 3 (units feet)
1983 North American Datum

File: Pogo_Fig4-1_Overview_ ENWI_12_2012_v06.mxd	Date: January 26, 2013
Version: 6	Author: RDI-DWR, LS

Initiated East Deep Hydrogeology Study

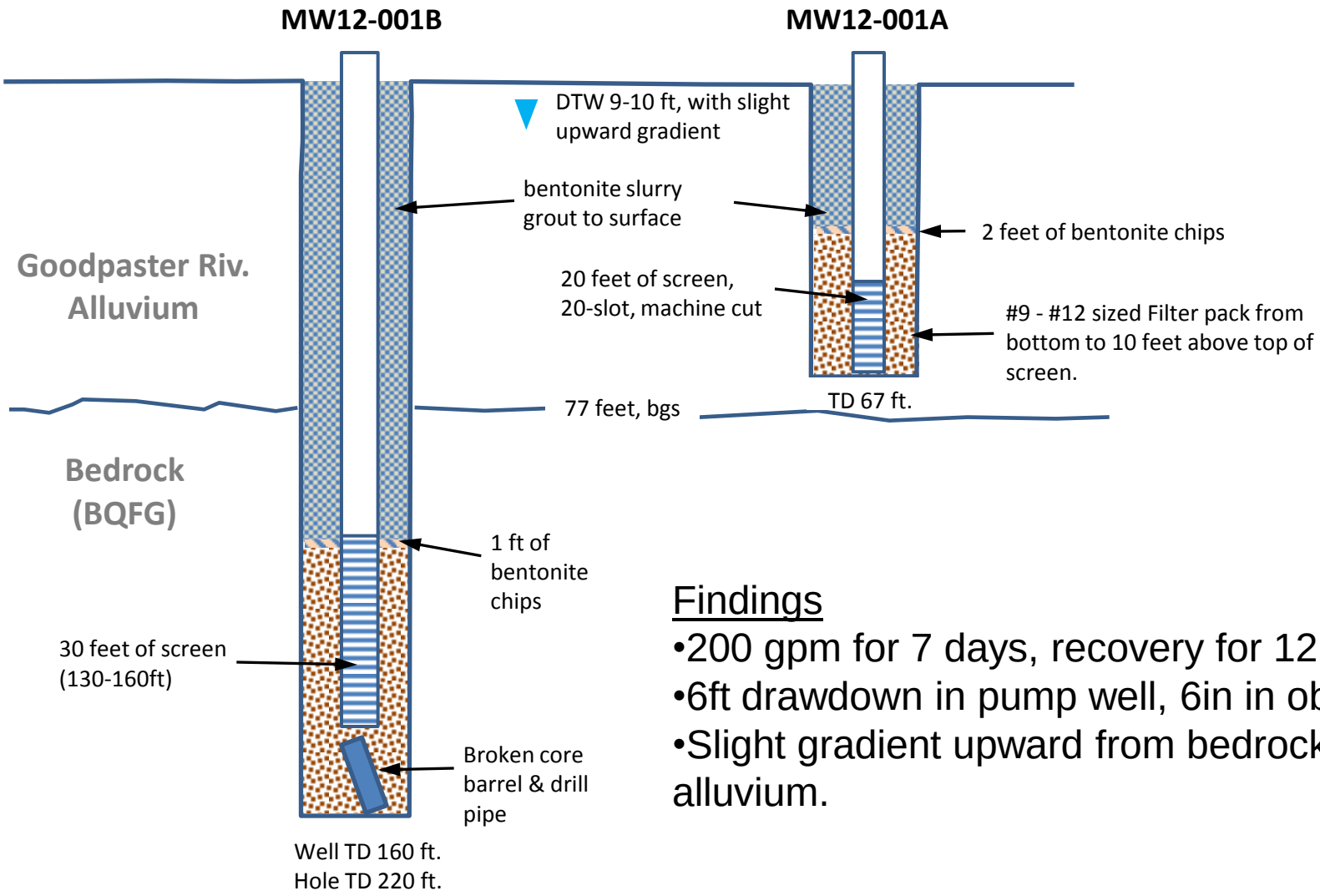
Plan View of East Deep Development



Purpose for Hydrogeologic Characterization

- Support permitting of the East Deep expansion.
  - Predict inflow to proposed East Deep Expansion and future mine-water discharge from all underground workings.
  - Predict impacts to water levels and water chemistry in hydrological regime as a result of the East Deep expansion.

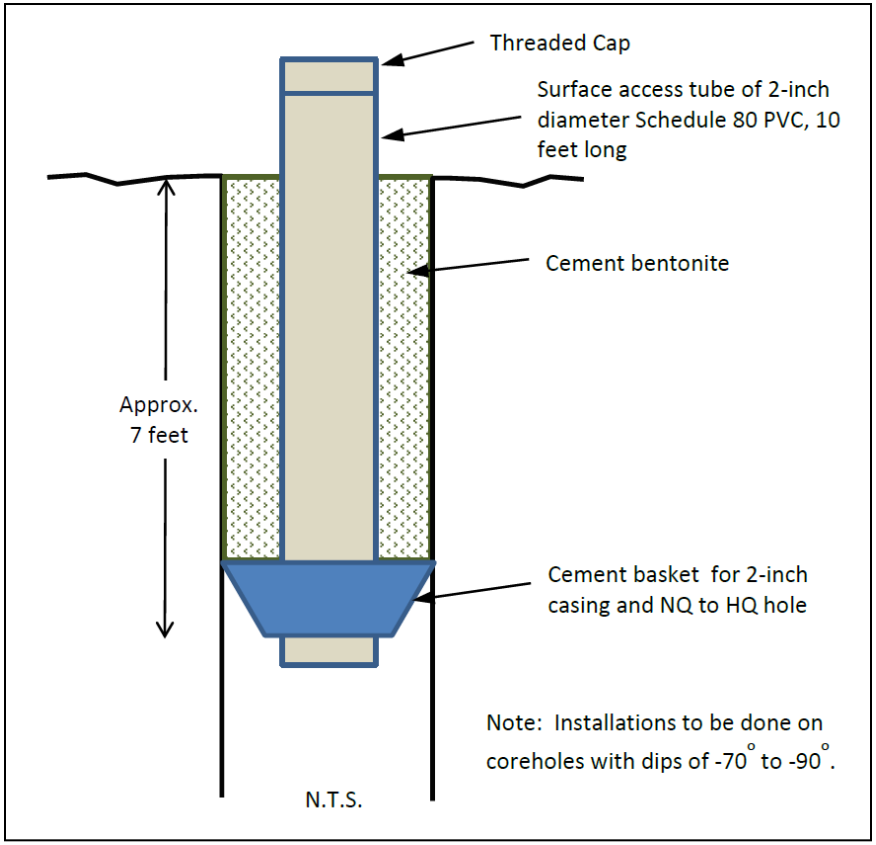
Installed Wells to Test Hydraulic Connection Between Alluvium and Bedrock at Goodpaster River Floodplain



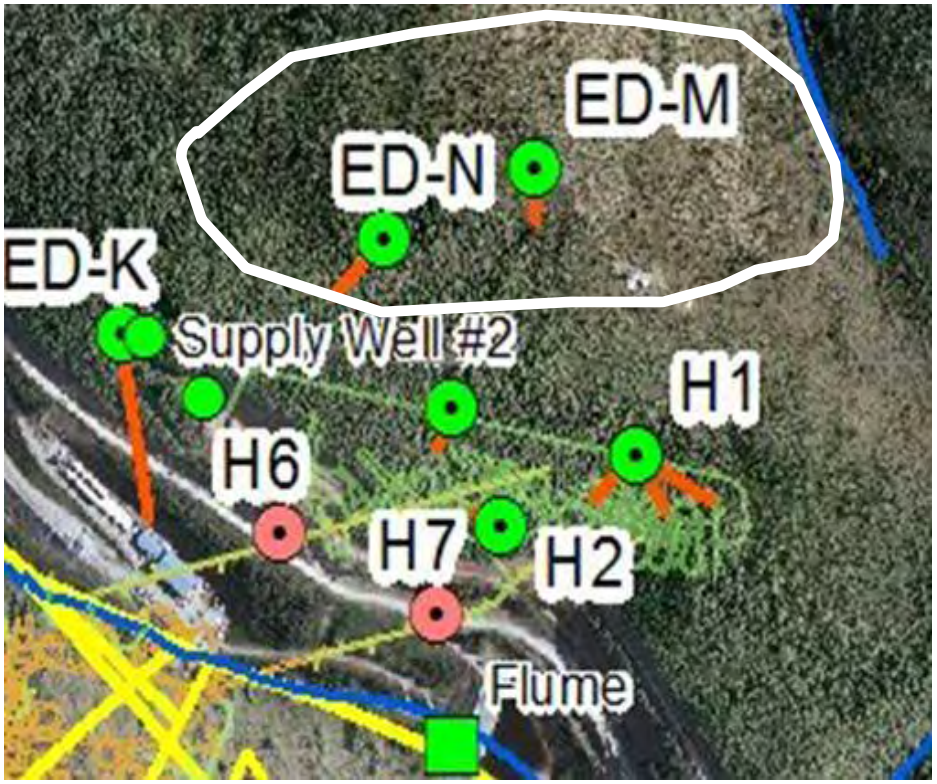
Findings

- 200 gpm for 7 days, recovery for 12 days.
- 6ft drawdown in pump well, 6in in obs well.
- Slight gradient upward from bedrock to alluvium.

Temporary Water Table Piezo Holes



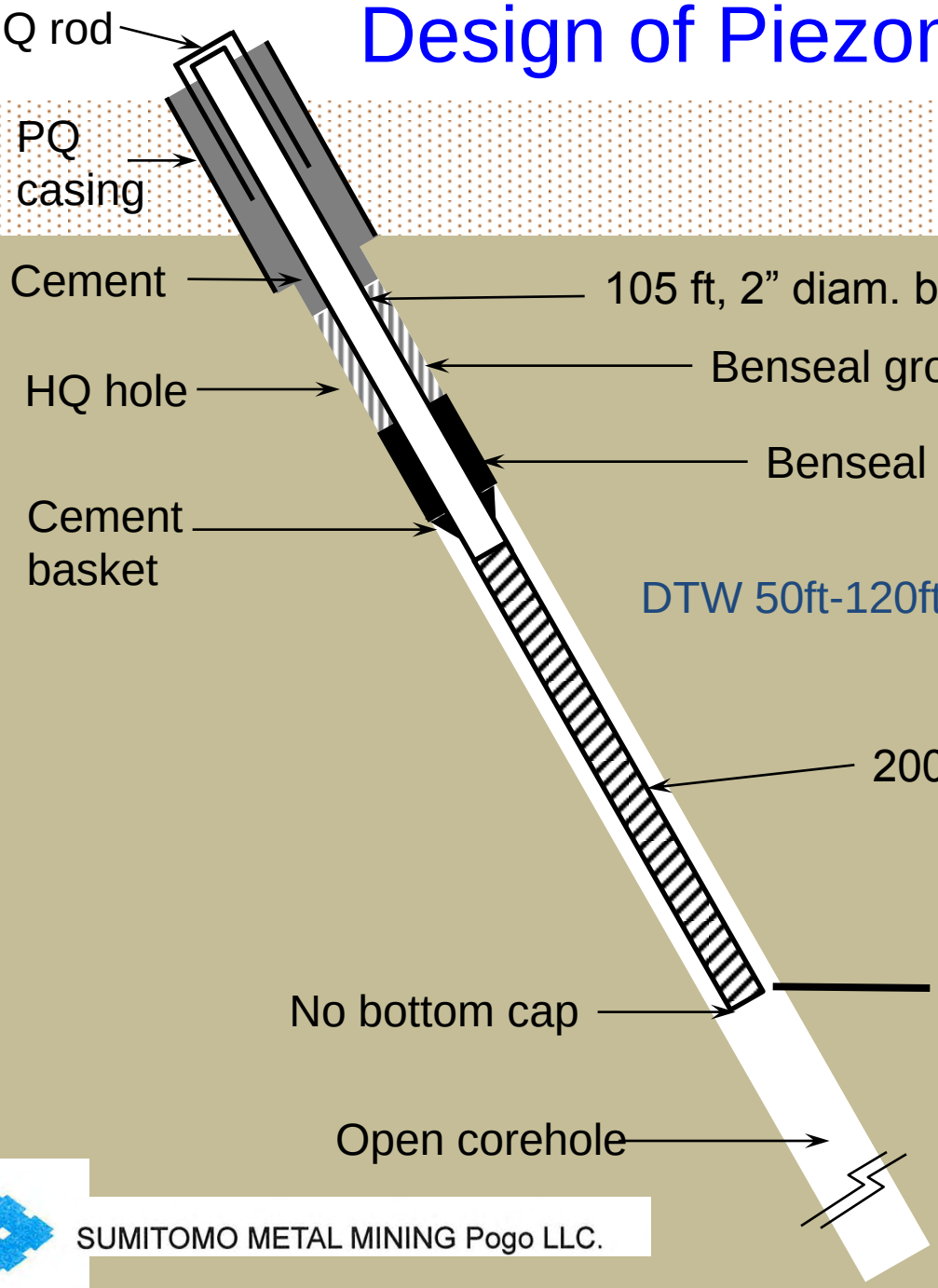
ADNR approved installation of surface covers.



Findings

- Holes open to the water table.
- Water table at 60 – 100 ft.

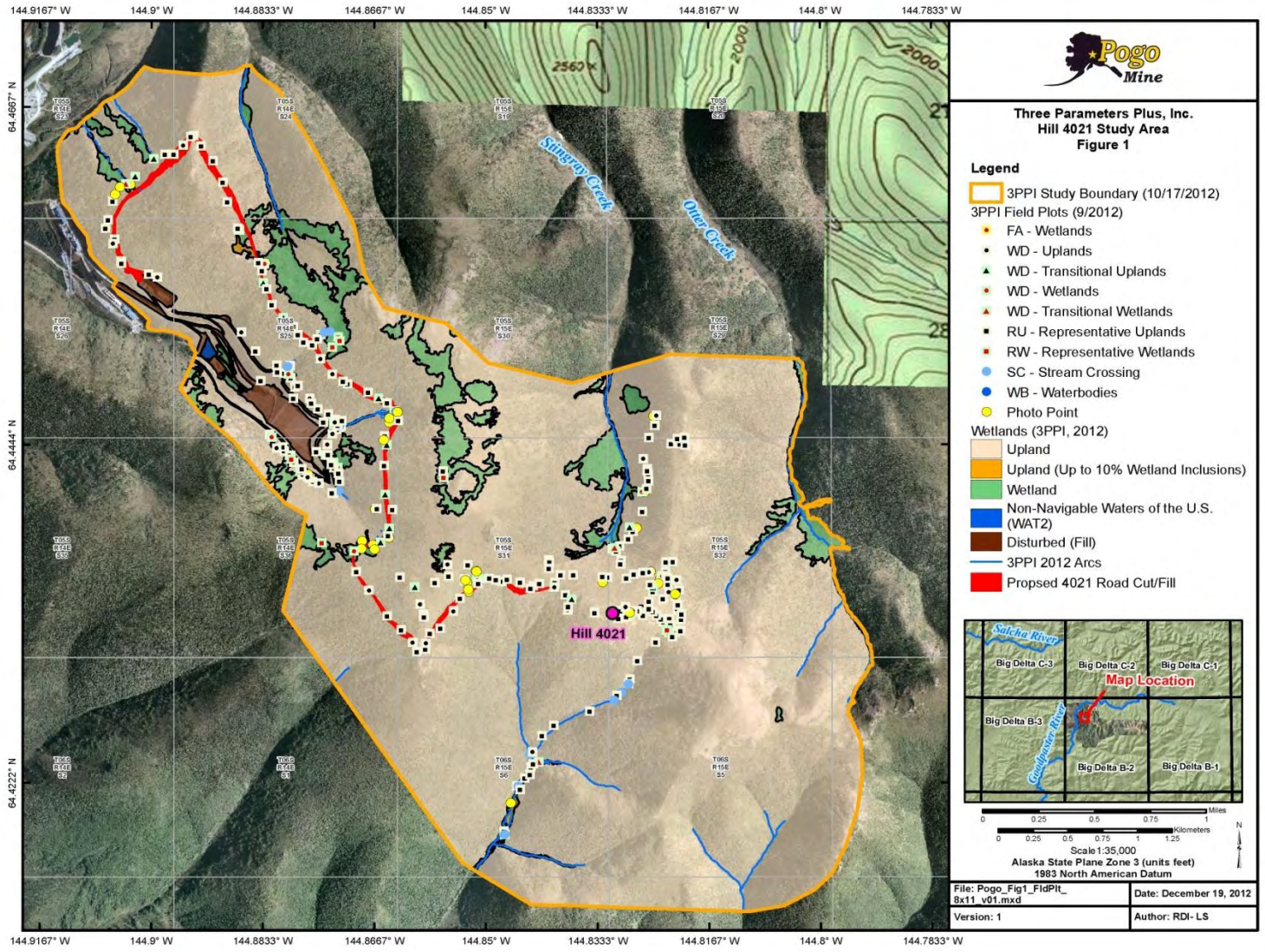
Design of Piezometers in Coreholes



Initiated Baseline Studies for Hill 4021

Completed Raptor and Bear Denning Surveys plus Wildlife Assessment and Wetlands Determination

Hill 4021 Wetlands Map



Initiated DSTF Closure Study Update

DSTF Closure Plan Amendments (1)

- Plan of Operations Amendment Approval (April 13, 2012) stipulates:

  "Permittee shall complete a dry stack tailings facility closure study approved, by ADNR, to evaluate the hydrologic, geochemical and geotechnical characteristics of the facility and proposed cover design. The study should model impacts to post-closure down-gradient water quality. Pogo shall submit a draft Study Plan to ADNR within 90 days from the effective date of this Plan of Operations Amendment. ADNR will provide comments, if any, to Pogo within 30 days of receipt of the draft Study Plan. Pogo shall incorporate ADNR's comments, if any, and complete the study. A report of the DSTF study should be submitted to ADNR by the end of 2013."

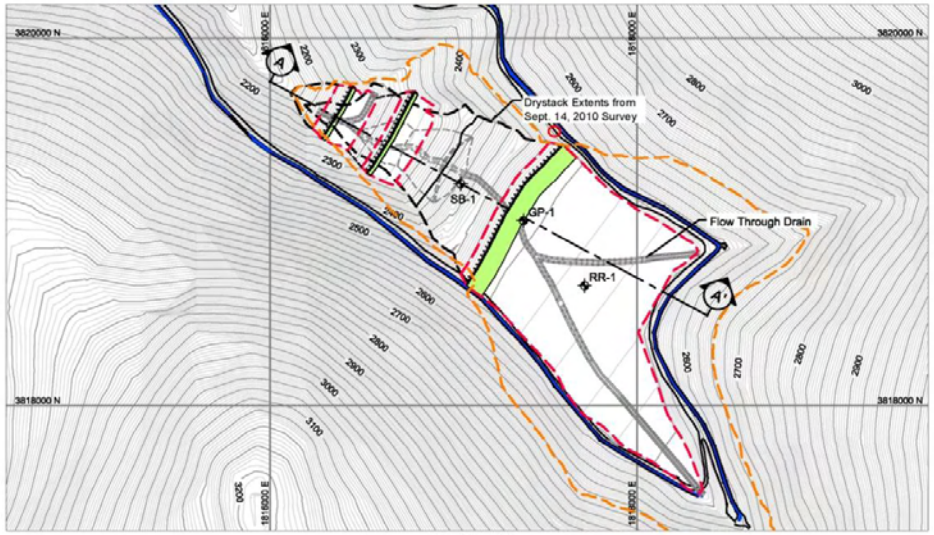
DSTF Piezometer locations

LEGEND

- Diversion Ditch (Existing)
- Extent of Year 2012 Material Placement
- Extent of Year 2030 Material Placement
- Green Rock Outer Shell
- GPA Materials
- Tailings

NOTES

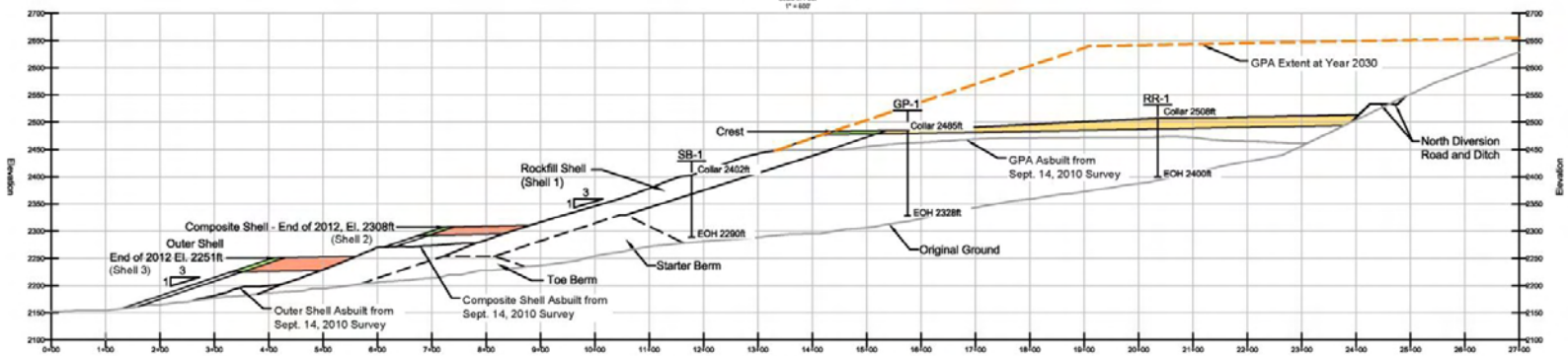
1. Contour interval is 5ft.
2. Base contour data received from POGO mine site dated May 20, 2010.
3. End of 2012 DSTF Design from SRK (2011).
4. GPA surface elevation adjusted to fit August 17, 2012 borehole location survey.



PLAN VIEW
DRY STACK STORAGE AREA

TABLE 1

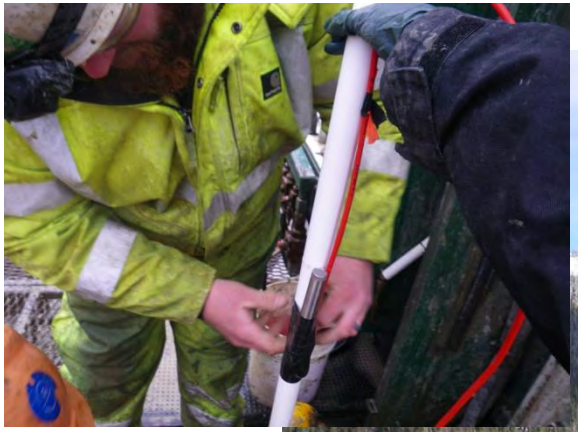
Borehole	Northing	Easting	Depth
SB-1	3,819,207	1,817,039	112
GP-1	3,819,007	1,817,381	157
RR-1	3,818,653	1,817,714	108



A CROSS SECTION A - A'

srk consulting SRK JOB NO.: 147900.080 FILE NAME: 147900.080-2.dwg	Pogo Mine Sumitomo Metal Mining LLC (Pogo)	Dry Stack Tailings Facility Closure Study Proposed Sonic Borehole and Vibrating Wire Piezometer Locations DATE: Sept. 21. 2012 APPROVED: DPN FIGURE: 2

Sonic Drill used to drill Piezometers



2012 Major Permit Activities

- Renewed ADEC Waste Disposal Permit 0131-BA002.
  Waste Management Permit No. 2011DB0012 was issued on February 7, 2012.
- Renewed ADNR Plan of Operations Approval F20036500.
  Plan of Operation Approval F20129500 issued on February 7, 2012.
- Amended US Army COE Section 404 Permit Q-1996-0211 to expand DSTF to 20 million tons.
  Amendment Approved on February 23, 2012.
- Major POO Modification (Rev 2) for DSTF Expansion
  Modification Approved on April 13, 2012.
- Four Minor POO Modifications Approved
  - Rev 1 - Additional to D-Wing Dorm
  - Rev 3 – Add Two Sand Filters to MWTP#2
  - Rev 4 - Upgrade of 9,500 feet of ORTW Line
  - Rev 5 - East Deep Expansion Power Distribution System and 2150 Portal

Other Activities

Cultural Survey at Pogo Road

Aubrey Morrison

Sarah Meitl


Photo by Judy Patrick

Achieved Met Station Data Recovery Goal

- The new Met Stations achieved 99% data recovery.
- This data will be used for Dispersion Modeling in support of Title V Permit triggered by East Deep Expansion.
- New 2150 Portal heaters push Pogo past 100 ton per year NOx Title V limit.

New Incinerator

Pogo Mine Environmental Staff

Jim Ward, Stacy Staley, Luke Walker, Sally McLeod, Leonard Hanson, Ben Farnham, and Julia Andoe (missing from photo).

Pogo: Mining Done Right!

Photo by Judy Patrick