FREEPORT-MCMORAN

Freeport-McMoRan Sierrita Inc.
6200 W. Duval Mine Rd.
PO Box 527
Green Valley, Arizona 85622-0527

November 18, 2019

Via e-mail: air.permits@pima.gov and
Certified Mail: 7017 0530 0000 7752 5760

Return Receipt Requested

Ms. Jacqueline Ronstadt
Air Compliance Manager
Pima County Department of Environmental Quality
33 N Stone Ave, Suite 700
Tucson, Arizona 85701

Re: Opportunity to Correct # PC1910-033
Freeport-McMoRan Sierrita Inc., Title V Air Quality Permit # 6067

Dear Ms. Ronstadt:

Freeport-McMoRan Sierrita Inc. (FMSI) is in receipt of the Pima County Department of Environmental Quality (PDEQ) Opportunity to Correct, dated October 23, 2019, relating to fugitive dust events at FMSI's tailings impoundment on October 8 and 9, 2019. As directed, FMSI is providing the corrective actions to be taken to achieve and maintain compliance with the cited deficiencies pursuant to Attachment B Condition II.E.1 and Attachment B Condition XIX.B.1.a, including the requested compliance documentation.

Corrective actions and preventive measures

To ensure compliance and to minimize the potential for a similar dust event, FMSI has identified the following actions that have or will be taken to improve dust control practices at the tailings impoundment:

Optimize Operational Response

During the October 8 and 9, 2019 tailings fugitive dust events, FMSI revised operational schedules to accommodate 24-hour coverage of magnesium chloride ($MgCl_2$) application on the tailings impoundment. This revision in operational schedules allows FMSI to cover larger areas of the impoundment with $MgCl_2$ to mitigate identified hot spots at a faster rate before, during and after an event. In addition to $MgCl_2$ application, FMSI shifted deposition from an area of scheduled deposition to the impacted area to help mitigate the dust. FMSI is only able to do this if the area has enough freeboard to be deposited on again, thus creating a thicker layer of deposition. While a thin layer of deposition can provide immediate dust relief during an event, this thin layer can cause more dusting issues in the future if not subsequently covered by thicker deposition. FMSI also redirected tailings personnel job duties to assist with the mitigation of the dust. This flexibility helps to optimize existing resources during an event. FMSI is committed to continue to use these practices, as necessary, for dust control on the tailings impoundment.

Improve Communication between FMSI Tailings and Environmental Departments

FMSI will continue to improve communication between the Tailings and Environmental Departments to increase effectiveness of control measures, help minimize response times and better plan for forecasted high wind events. The two departments have started using group communication platforms such as Microsoft TEAMS and group texts, in addition to email to communicate better before, during, and after events. These platforms allow the departments to better function as a team to make focused decisions in a timely manner. The Dust Control Management Team comprised of Tailings and Environmental personnel also meets on a frequent basis to discuss projects, evaluate new technologies, and provide feedback to one another. In addition, Environmental personnel frequently attend and participate in Tailings Department daily "line-out" meetings. The objective of these meetings is to discuss safety concerns, environmental issues, and to review the day's proposed activities.

Evaluate Potential Improvements to Dust Control Methods and Suppressant Application Equipment

FMSI is committed to evaluating potential improvements to dust control methods and suppressant application equipment that may better fit our needs in various situations. This year alone, we have tested three pieces of equipment, the Sherp, the RotoGator and floater trucks. While the results of testing this equipment have been mixed, FMSI is continuing to evaluate other equipment. In addition, following the October 8 and 9, 2019 events, FMSI contracted with a third-party dust suppressant application company to apply $MgCl_2$ to the surface of the impoundment using contractor-owned application equipment. This method allowed a larger area of the dam to be covered with $MgCl_2$ in a shorter period of time. FMSI is continuing to evaluate third party dust suppressant application companies and their equipment to better respond to the needs of the impoundment in varying environmental conditions.

Review and Update FMSI's Tailings Dam Dust Control Management Plan

The FMSI Tailings Dam Dust Control Management Plan is updated on an ongoing basis as new processes and technologies arise so that the plan reflects current Best Management Practices (BMPs) for control of fugitive dust at the tailings impoundment. For example, in lieu of using drones, FMSI has recently installed Planet imagery software that allows individuals to view daily aerial photos of the impoundment to better identify (in near real-time) where $MgCl_2$ has been applied and any areas that are drying out on the impoundment. FMSI has also evaluated using a dye in the $MgCl_2$ to improve visibility of dust suppressant that has been applied on the impoundment and plans to continue to use the dye for this purpose.

Please contact me at (520) 393-2376 if there are questions or additional information is necessary.

Sincerely,

Natalie Nunez

Natalie Nunez

Senior Environmental Scientist

20191118_001

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

David Rhoades, President and General Manager

David J Rhoades 11/18/19

(Signature) (date)

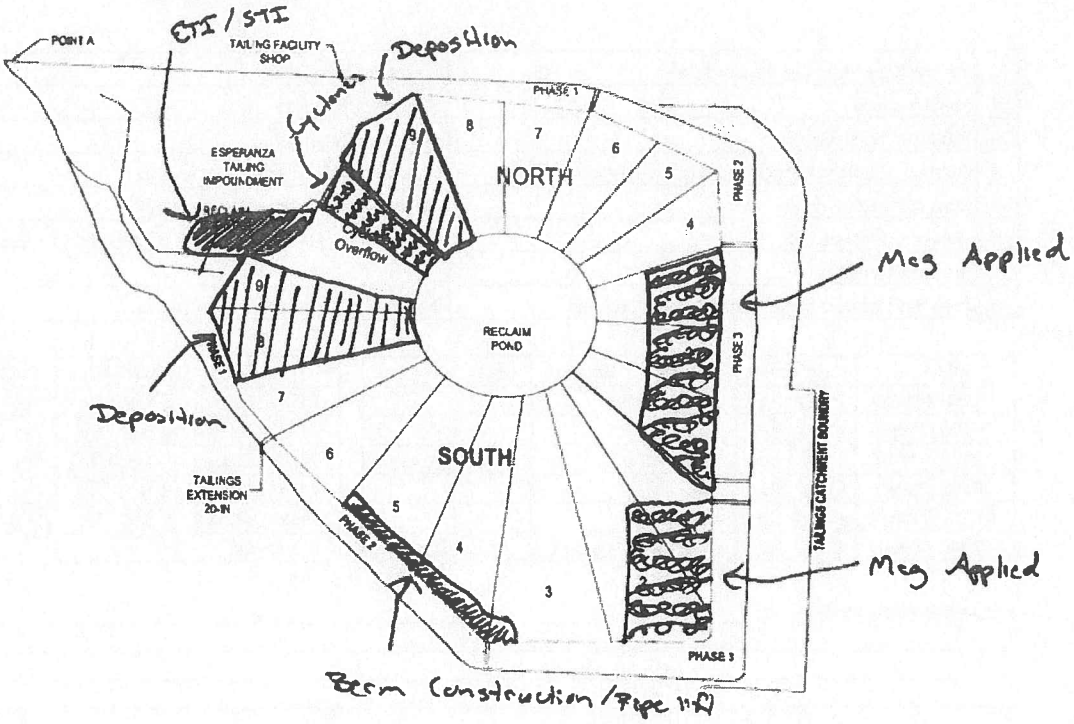
Tailings Dam Environmental Weekly Activities Report

Operator: Derek Berry Date: 9-27 to 10-3

Primary Controls	N/S	Phase	Area			
Area of Deposition	N/S	1/1	9 / 9,8			
Special Wetting Area	None	—	—			
Water Truck #	88	94	39	38	97 ~~Rental~~	Rental
No. of Loads	3	2	34	26	8	

	Gallons	N/S	Approximate Area Covered
All-track Application	68,000	N/S	1/2 Phase 3 N. Dam, 1/2 Phase 3 S. Dam
Mag. Chloride Applied to Rds	0	—	—
Site Conditions			
Area Under Construction	Pipe 1/4	ETI/STI	
Inches of Rain Throughout Week	0		

Comments: Started deposition on S. Dam on 10-1 moved back and forth several times due to leaks on the line.
Started mag application on N. Dam on 10-1



Reviewed by ELW M

Tailings Dam Environmental Weekly Activities Report

Operator: Jesus Hernandez Date: 10-4 to 10-10

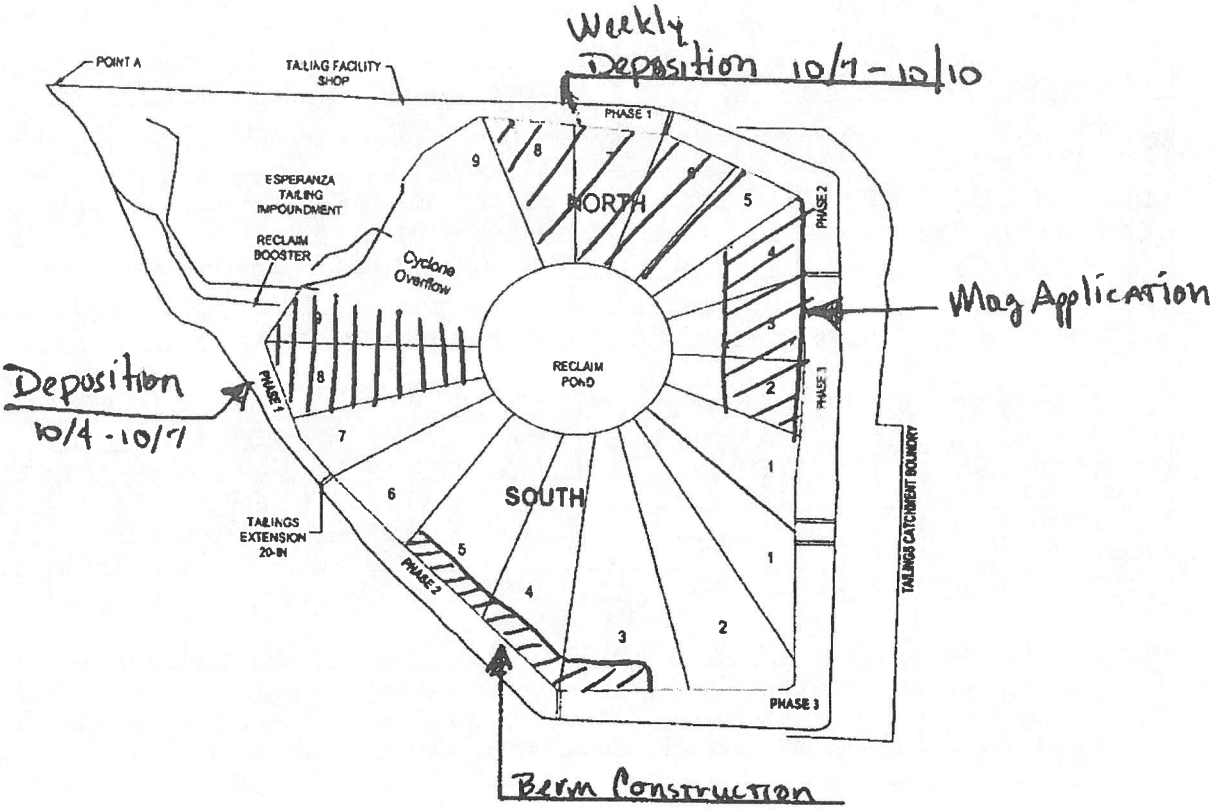
Primary Controls	N/S	Phase	Area			
Area of Deposition	N/S		N·9·8 / S·6·5			
Special Wetting Area	None	—	—		97	
Water Truck #	88	94	38	37	Rental	Rental
No. of Loads	24	6	38	41	21	

	Gallons	N/S	Approzimate Area Covered
All-track Application	64,250	N	
Mag. Chloride Applied to Rds	—	—	

Site Conditions

Area Under Construction	ETI / STT	South Dam
Inches of Rain Throughout Week	Ø	

Comments: Deposition Phase 1 & 2 Berm Construction on Going ETI ongoing all Tracking Phase 3 North Dam

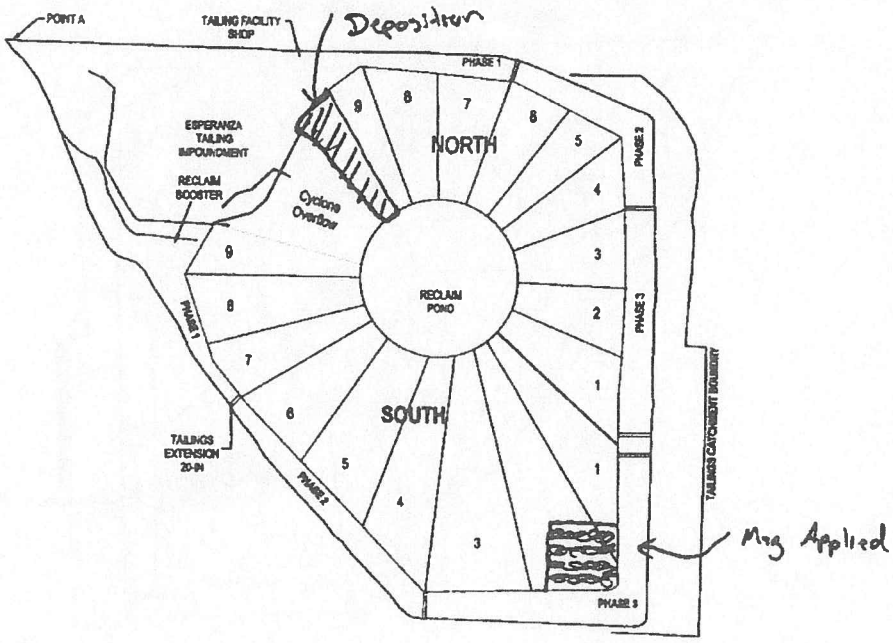


Reviewed by ELW _M_

Tailings Impoundment Surface Inspection

Date: 9-30-19 Time: Days

Dam Inspected: Soil Inspected By: John, Richard, Vince, Sergio



1	Recent Deposition (14 days or less)	No Action Required
2	Moist Surface	No Action Required
3	Established Salt Crust	No Action Required
4	Crusted with light surface sands (blown in/washed in)	Watch Area/Re-inspect in one week
5	Crust is breaking down	Watch Area/Re-inspect in one week
6	Piles of standing sands	Action Required - Deposition or application of suppressant
7	Broken down crust	
8	Area has had dust suppressant recently applied	Watch Area/Re-inspect in one week

All-Track	Availability	Running	Location	Loads	Tot Gal.
70105 (750gl)	Yes No	Yes No		4	3,000
70106 (750gl)	Yes No	Yes No			
70107 (750gl)	Yes No	Yes No			
70108 (750gl)	Yes No	Yes No			
70109 (1500gl)	Yes No	Yes No			
70110 (750gl)	Yes No	Yes No		11	8,250

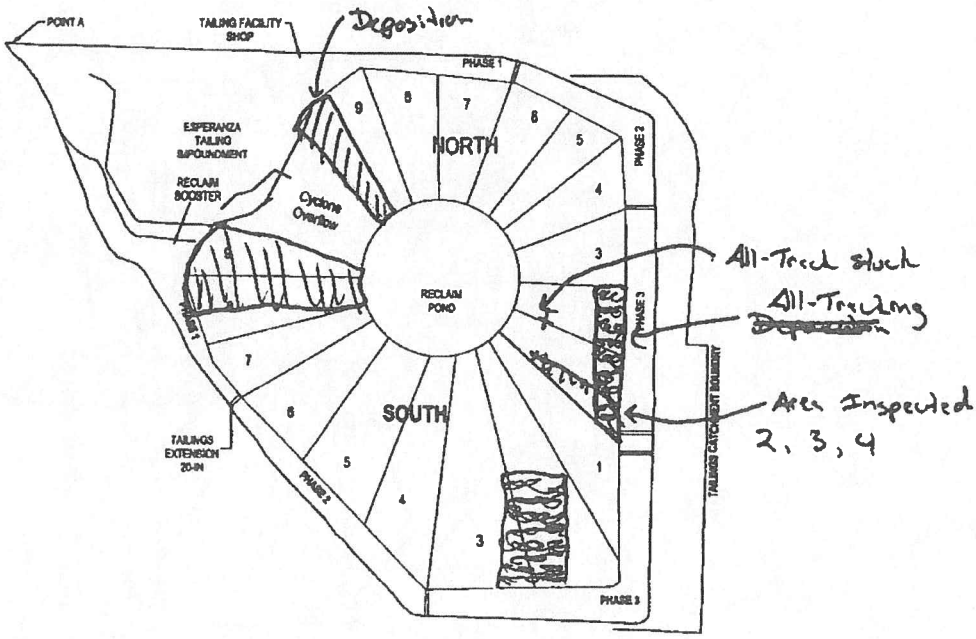
H2O Trucks	Availability	Running	Loads
73737 (8000gl)	Yes No	Yes No	14
73738 (8000gl)	Yes No	Yes No	
74188 (5000gl)	Yes No	Yes No	
74194 (5000gl)	Yes No	Yes No	Mag to All-Tracks
74197 (8000gl)	Yes No	Yes No	
Rental			

Inspection Action Plan:

Tailings Impoundment Surface Inspection

Date: 10-1-19 Time: Days

Dam Inspected: North Inspected By: Derek Berry



1	Recent Deposition (14 days or less)	No Action Required
(2)	Moist Surface	No Action Required
(3)	Established Salt Crust	No Action Required
(4)	Crusted with light surface sands (blown in/washed in)	Watch Area/Re-inspect in one week
5	Crust is breaking down	Watch Area/Re-inspect in one week
6	Piles of standing sands	Action Required - Deposition or application of suppressant
7	Broken down crust	
8	Area has had dust suppressant recently applied	Watch Area/Re-inspect in one week

All-Track	Availability	Running	Location	Loads	Tot Gal.
70105 (750gl)	(Yes) No	(Yes) No		1	750
70106 (750gl)	(Yes) No	Yes (No)			
70107 (750gl)	(Yes) No	(Yes) No		6	4500
70108 (750gl)	(Yes) No	Yes (No)			
70109 (1500gl)	(Yes) No	Yes (No)			
70110 (750gl)	(Yes) No	(Yes) No		14	10,500

H2O Trucks	Availability	Running	Loads
73737 (8000gl)	(Yes) No	Yes No	3
73738 (8000gl)	(Yes) No	Yes No	17
74188 (5000gl)	Yes (No)	Yes (No)	
74194 (5000gl)	(Yes) No	(Yes) No	Mag to All-Tracks
74197 (8000gl)	(Yes) No	Yes (No)	
Rental			

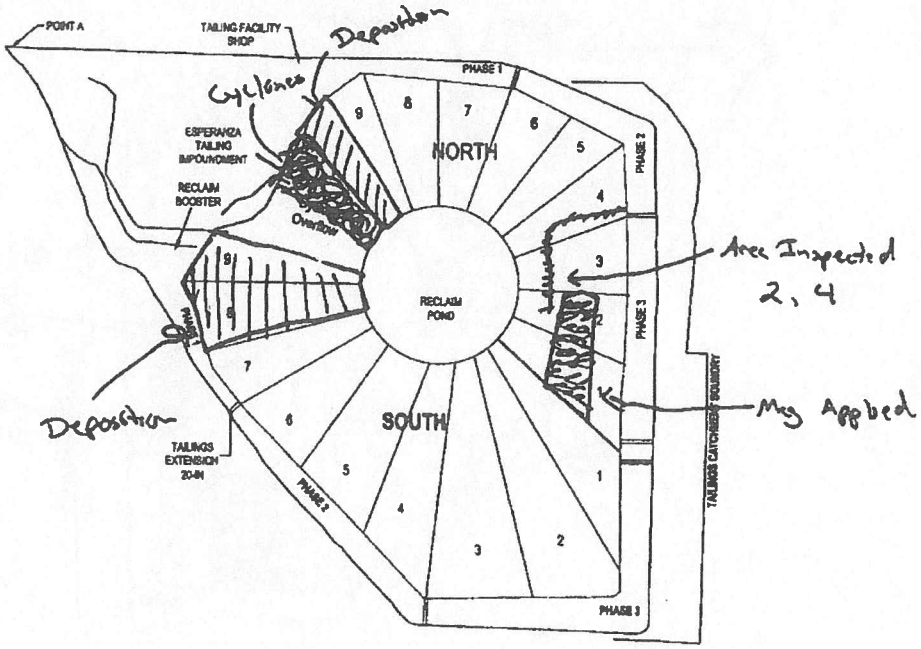
Inspection Action Plan: North dam dried over weekend, switched focus from south

3-11-2019 Revision #1

Tailings Impoundment Surface Inspection

Date: 10-2-19 Time: Days

Dam Inspected: North Inspected By: Derek



1	Recent Deposition (14 days or less)	No Action Required
2	Moist Surface	No Action Required
3	Established Salt Crust	No Action Required
4	Crusted with light surface sands (blown in/washed in)	Watch Area/Re-inspect in one week
5	Crust is breaking down	Watch Area/Re-inspect in one week
6	Piles of standing sands	Action Required - Deposition or application of suppressant
7	Broken down crust	
8	Area has had dust suppressant recently applied	Watch Area/Re-inspect in one week

All-Track	Availability	Running	Location	Loads	Tot Gal.
70105 (750gl)	(Yes) No	(Yes) No		11	8,250
70106 (750gl)	(Yes) No	Yes (No)			
70107 (750gl)	(Yes) No	(Yes) No		5	3,750
70108 (750gl)	(Yes) No	Yes (No)			
70109 (1500gl)	(Yes) No	Yes (No)			
70110 (750gl)	(Yes) No	(Yes) No		7	5,250

H2O Trucks	Availability	Running	Loads
73737 (8000gl)	(Yes) No	(Yes) No	17
73738 (8000gl)	(Yes) No	(Yes) No	9
74188 (5000gl)	Yes (No)	Yes (No)	
74194 (5000gl)	(Yes) No	(Yes) No	1
74197 (8000gl)	(Yes) No	Yes (No)	
Rental			

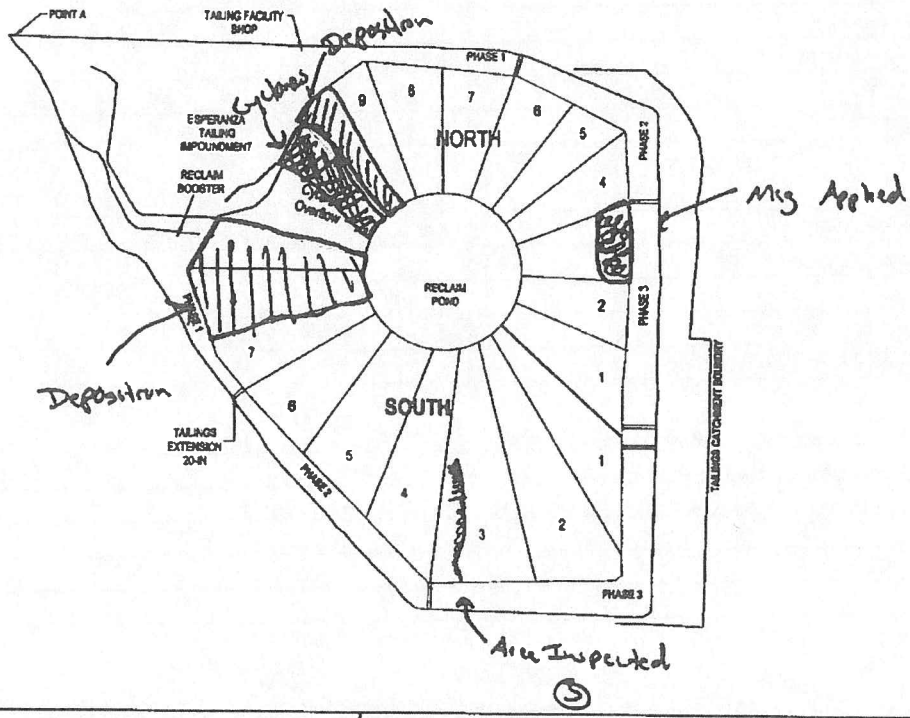
Inspection Action Plan: Surface dry mogging as much as possible with All-Tracks crest will be manual

3-11-2019 Revision #1

Tailings Impoundment Surface Inspection

Date: 10-3-19 Time: Days

Dam Inspected: South Inspected By: Derek



1	Recent Deposition (14 days or less)	No Action Required
2	Moist Surface	No Action Required
3	Established Salt Crust	No Action Required
4	Crusted with light surface sands (blown in/washed in)	Watch Area/Re-inspect in one week
5	Crust is breaking down	Watch Area/Re-inspect in one week
6	Piles of standing sands	Action Required - Deposition or application of suppressant
7	Broken down crust	
8	Area has had dust suppressant recently applied	Watch Area/Re-inspect in one week

All-Track	Availability	Running	Location	Loads	Tot Gal.
70105 (750gl)	Yes No	Yes No			
70106 (750gl)	Yes No	Yes No			
70107 (750gl)	Yes No	Yes No		7	5250
70108 (750gl)	Yes No	Yes No			
70109 (1500gl)	Yes No	Yes No			
70110 (750gl)	Yes No	Yes No	North	11	8250

H2O Trucks	Availability	Running	Loads
73737 (8000gl)	Yes No	Yes No	
73738 (8000gl)	Yes No	Yes No	
74188 (5000gl)	Yes No	Yes No	
74194 (5000gl)	Yes No	Yes No	
74197 (8000gl)	Yes No	Yes No	8
Rental			

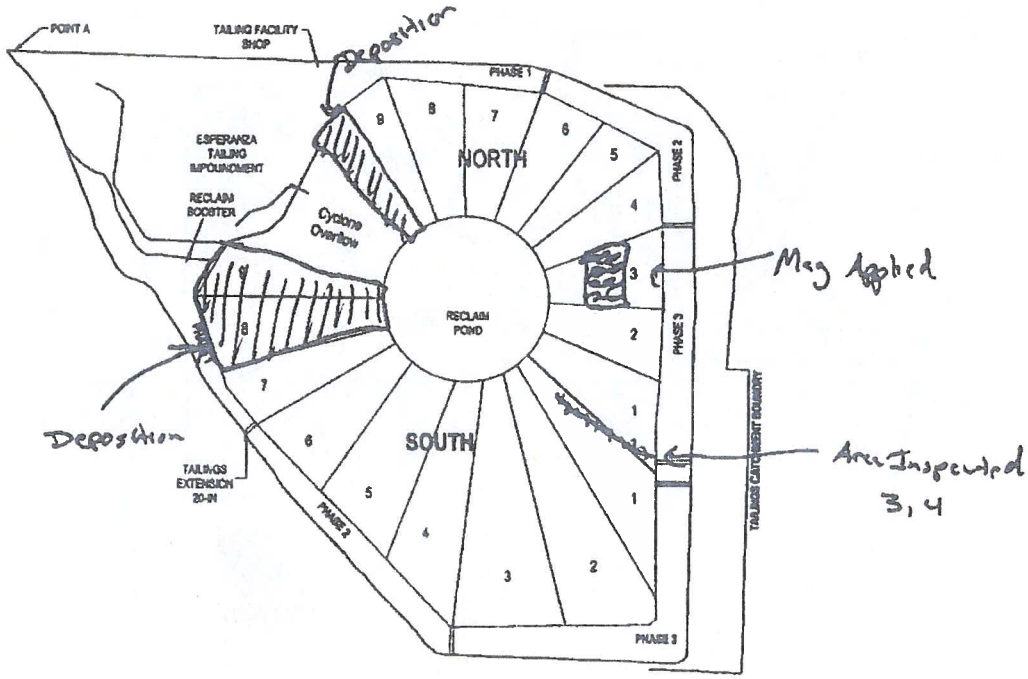
Inspection Action Plan:

3-11-2019 Revision #1

Tailings Impoundment Surface Inspection

Date: 10-4-19 Time: Noon

Dam Inspected: North Inspected By: Derek



1	Recent Deposition (14 days or less)	No Action Required
2	Moist Surface	No Action Required
3	Established Salt Crust	No Action Required
4	Crusted with light surface sands (blown in/washed in)	Watch Area/Re-inspect in one week
5	Crust is breaking down	Watch Area/Re-inspect in one week
6	Piles of standing sands	Action Required - Deposition or application of suppressant
7	Broken down crust	
8	Area has had dust suppressant recently applied	Watch Area/Re-inspect in one week

All-Track	Availability	Running	Location	Loads	Tot Gal.
70105 (750gl)	Yes No	Yes No			
70106 (750gl)	Yes No	Yes No			
70107 (750gl)	Yes No	Yes No			
70108 (750gl)	Yes No	Yes No			
70109 (1500gl)	Yes No	Yes No			
70110 (750gl)	Yes No	Yes No	North EAST	2	1,500

TOTAL 1,500

H2O Trucks	Availability	Running	Loads
73737 (8000gl)	Yes No	Yes No	14
73738 (8000gl)	Yes No	Yes No	9
74188 (5000gl)	Yes No	Yes No	
74194 (5000gl)	Yes No	Yes No	2
74197 (8000gl)	Yes No	Yes No	6
Rental			

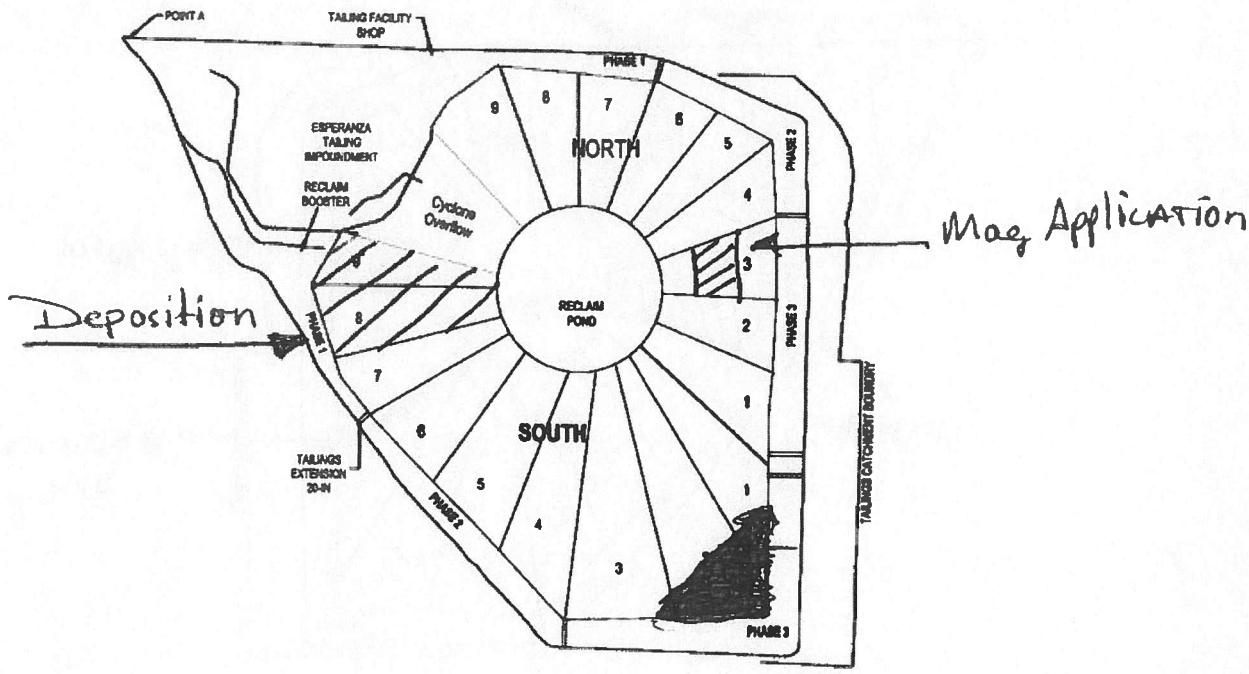
Inspection Action Plan: Area near worker may take an All-Track

3-11-2019 Revision #1

Tailings Impoundment Surface Inspection

Date: 10/05/2019 Time: 10:00 HRS

Dam Inspected: South Inspected By: PAUL DIAZ



1	Recent Deposition (14 days or less)	No Action Required
2	Moist Surface	No Action Required
3	Established Salt Crust	No Action Required
4	Crusted with light surface sands (blown in/washed in)	Watch Area/Re-inspect in one week
5	Crust is breaking down	Watch Area/Re-inspect in one week
6	Piles of standing sands	Action Required - Deposition or application of suppressant
7	Broken down crust	
8	Area has had dust suppressant recently applied	Watch Area/Re-inspect in one week

All-Track	Availability	Running	Location	Loads	Tot Gal.
70105 (750gl)	(Yes) No	(Yes) No	N/E	3	2250
70106 (750gl)	(Yes) No	Yes (No)			
70107 (750gl)	(Yes) No	(Yes) No	N/E	7	5250
70108 (750gl)	[illegible] (No)	Yes (No)			
70109 (1500gl)	(Yes) No	[illegible] (No)			
70110 (750gl)	(Yes) No	Yes (No)			

TOTAL = 7500

H2O Trucks	Availability	Running	Loads
73737 (8000gl)	(Yes) No	Yes (No)	
73738 (8000gl)	(Yes) No	Yes (No)	
74188 (5000gl)	Yes (No)	Yes No	
74194 (5000gl)	(Yes) No	Yes (No)	
74197 (8000gl)	(Yes) No	Yes (No)	
Rental			

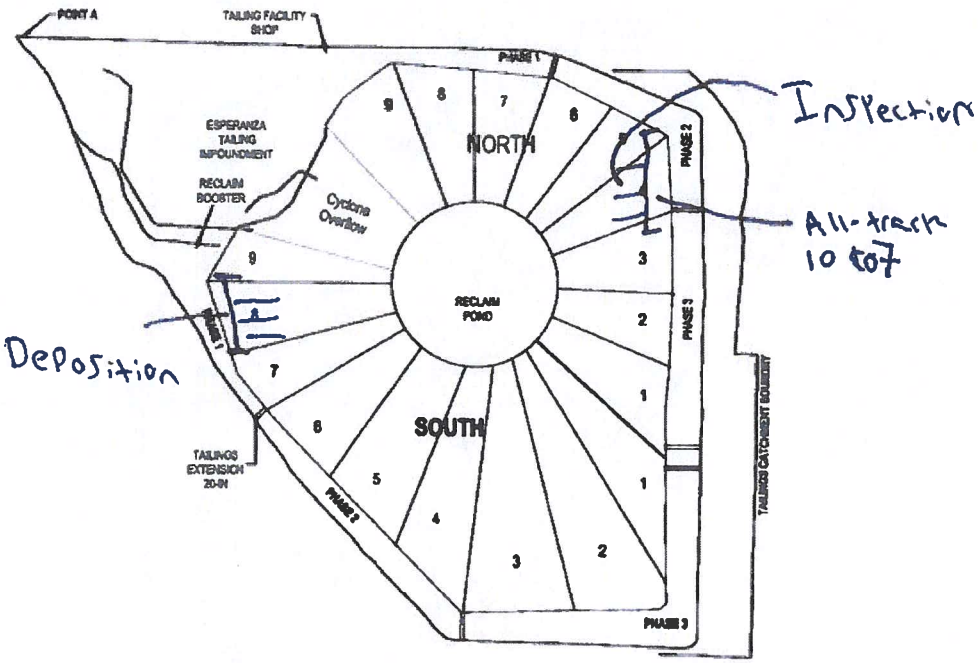
Inspection Action Plan: Need to Re-watered, Mag a good

3-11-2019 Revision #1

Tailings Impoundment Surface Inspection

Date: 10-6-19 Time: 11:00 AM

Dam Inspected: Phase 2 Section 4 & 5 Inspected By: Hector R.



1	Recent Deposition (14 days or less)	No Action Required
X	Moist Surface	No Action Required
3	Established Salt Crust	No Action Required
4	Crusted with light surface sands (blown in/washed in)	Watch Area/Re-inspect in one week
5	Crust is breaking down	Watch Area/Re-inspect in one week
6	Piles of standing sands	Action Required - Deposition or application of suppressant
7	Broken down crust	
8	Area has had dust suppressant recently applied	Watch Area/Re-inspect in one week

All-Track	Availability	Running	Location	Loads	Tot Gal.
70105 (750gl)	(Yes) No	Yes No			
70106 (750gl)	(Yes) No	Yes No			
70107 (750gl)	(Yes) No	(Yes) No	North Berm	5	3,750
70108 (750gl)	(Yes) (No)	Yes No			
70109 (1500gl)	(Yes) No	Yes No			
70110 (750gl)	(Yes) No	(Yes) No	North Berm	5	3,750

TOTAL: 7,500

H2O Trucks	Availability	Running	Loads
73737 (8000gl)	(Yes) No	Yes No	
73738 (8000gl)	(Yes) No	Yes No	
74188 (5000gl)	Yes (No)	Yes No	
74194 (5000gl)	(Yes) No	(Yes) No	3 none
74197 (8000gl)	(Yes) No	Yes No	
Rental			

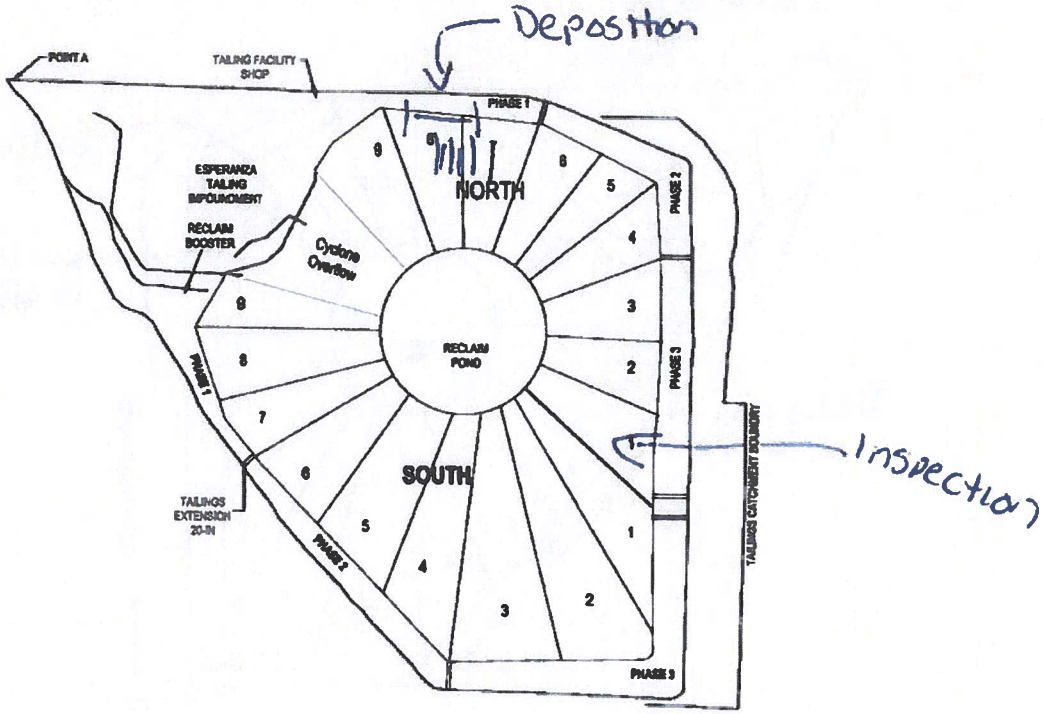
Inspection Action Plan: We are mogging Phase 2 Section 4 and 5 north to South as close to the water as possible

3-11-2019 Revision #1

Tailings Impoundment Surface Inspection

Date: 10-07-19 Time: 1100 A.M.

Dam Inspected: NORTH Inspected By: NICK PINA



1	Recent Deposition (14 days or less)	No Action Required
X 2	Moist Surface	No Action Required
3	Established Salt Crust	No Action Required
4	Crusted with light surface sands (blown in/washed in)	Watch Area/Re-inspect in one week
5	Crust is breaking down	Watch Area/Re-inspect in one week
6	Piles of standing sands	Action Required - Deposition or application of suppressant
7	Broken down crust	
8	Area has had dust suppressant recently applied	Watch Area/Re-inspect in one week

All-Track	Availability	Running	Location	Loads	Tot Gal.
70105 (750gl)	(Yes) No	Yes No			
70106 (750gl)	(Yes) No	Yes No			
70107 (750gl)	(Yes) No	Yes No			
70108 (750gl)	(Yes) No	Yes No			
70109 (1500gl)	(Yes) No	Yes No			
70110 (750gl)	(Yes) No	Yes No			

TOTAL = 0

H2O Trucks	Availability	Running	Loads
73737 (8000gl)	(Yes) No	(Yes) No	12
73738 (8000gl)	(Yes) No	(Yes) No	4
74188 (5000gl)	Yes No	Yes No	
74194 (5000gl)	Yes No	Yes No	
74197 (8000gl)	Yes No	Yes No	
Rental			

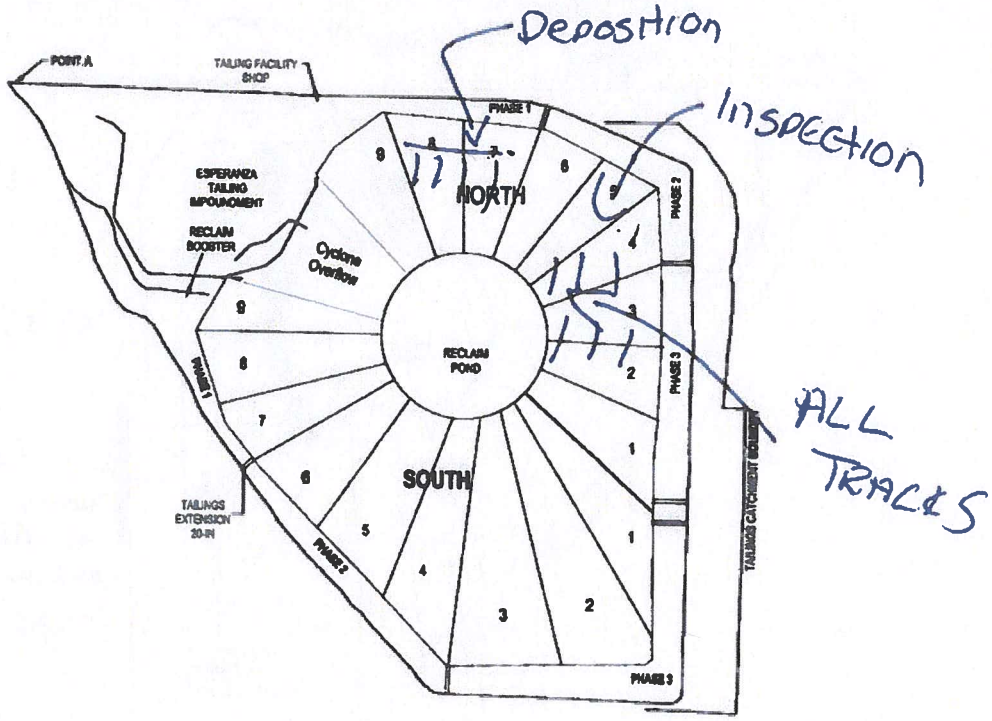
Inspection Action Plan: We didn't run all tracks today due to hole in the line and we had to switch dams. We only ran water trucks

3-11-2019 Revision #1

Tailings Impoundment Surface Inspection

Date: 10-4-19 Time: 400 AM

Dam Inspected: NORTH Inspected By: N. PINA



1	Recent Deposition (14 days or less)	No Action Required
2	Moist Surface	No Action Required
3	Established Salt Crust	No Action Required
4	Crusted with light surface sands (blown in/washed in)	Watch Area/Re-inspect in one week
5	Crust is breaking down	Watch Area/Re-inspect in one week
6	Piles of standing sands	Action Required - Deposition or application of suppressant
7	Broken down crust	
8	Area has had dust suppressant recently applied	Watch Area/Re-inspect in one week

All-Track	Availability	Running	Location	Loads	Tot Gal.
70105 (750gl)	Yes No	Yes No			
70106 (750gl)	Yes No	Yes No	North	4	3,000
70107 (750gl)	Yes No	Yes No			
70108 (750gl)	Yes No	Yes No	North	6	4,500
70109 (1500gl)	Yes No	Yes No			
70110 (750gl)	Yes No	Yes No	North	6	4,500

TOTAL = 12,000

H2O Trucks	Availability	Running	Loads
73737 (8000gl)	Yes No	Yes No	
73738 (8000gl)	Yes No	Yes No	2
74188 (5000gl)	Yes No	Yes No	
74194 (5000gl)	Yes No	Yes No	
74197 (8000gl)	Yes No	Yes No	9
Rental			

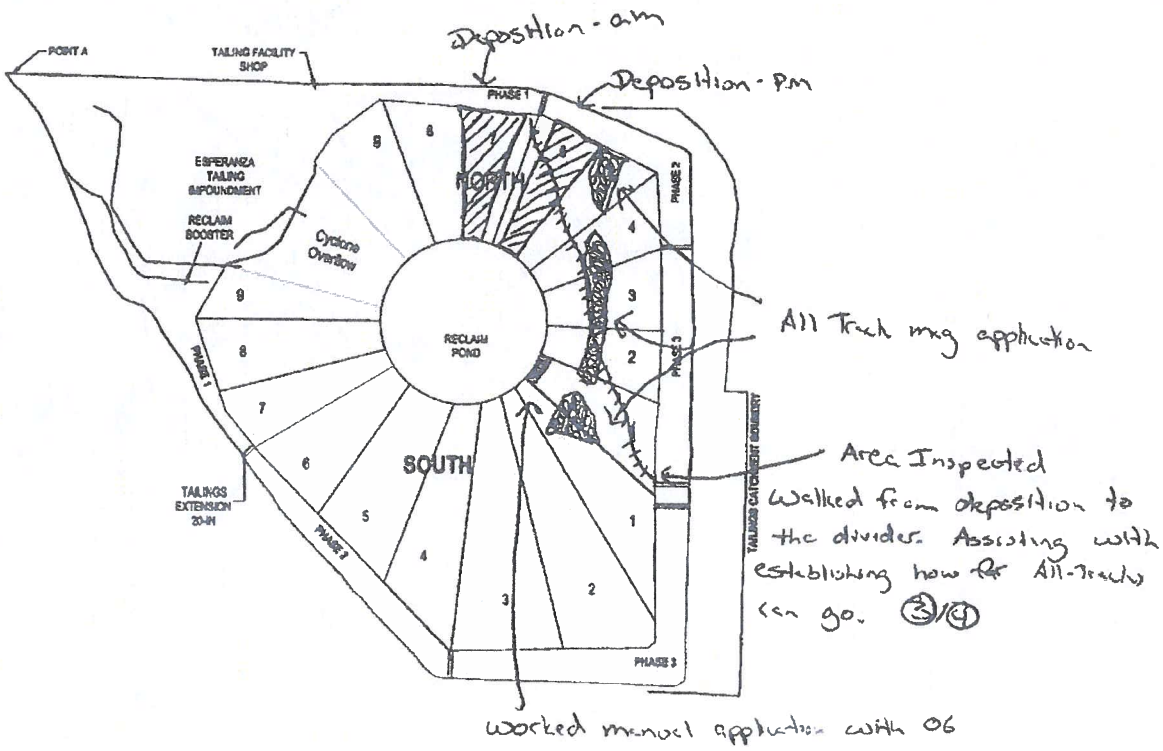
Inspection Action Plan: Running all tracks on North Dam Phase #2 section #3 Running all tracks in the dry area.

3-11-2019 Revision #1

Tailings Impoundment Surface Inspection

Date: 10-9-19 Time: 13:00

Dam Inspected: North Inspected By: Derek, Bryce, Troye, Pro



1	Recent Deposition (14 days or less)	No Action Required
2	Moist Surface	No Action Required
3	Established Salt Crust	No Action Required
4	Crusted with light surface sands (blown in/washed in)	Watch Area/Re-inspect in one week
5	Crust is breaking down	Watch Area/Re-inspect in one week
6	Piles of standing sands	Action Required - Deposition or application of suppressant
7	Broken down crust	
8	Area has had dust suppressant recently applied	Watch Area/Re-inspect in one week

All-Track	Availability	Running	Location	Loads	Tot Gal.
70105 (750gl)	Yes No	Yes No	North	10	7500
70106 (750gl)	Yes No	Yes No		4	3000
70107 (750gl)	Yes No	Yes No		—	
70108 (750gl)	Yes No	Yes No		2	1500
70109 (1000gl)	Yes No	Yes No		5	5000
70110 (750gl)	Yes No	Yes No	—	14	10,500

TOTAL = 27,500

H2O Trucks	Availability	Running	Loads
73737 (8000gl)	Yes No	Yes No	15
73738 (8000gl)	Yes No	Yes No	13
74188 (5000gl)	Yes No	Yes No	mag to All-Tracks
74194 (5000gl)	Yes No	Yes No	mag to All-Tracks
74197 (8000gl)	Yes No	Yes No	6
Rental			

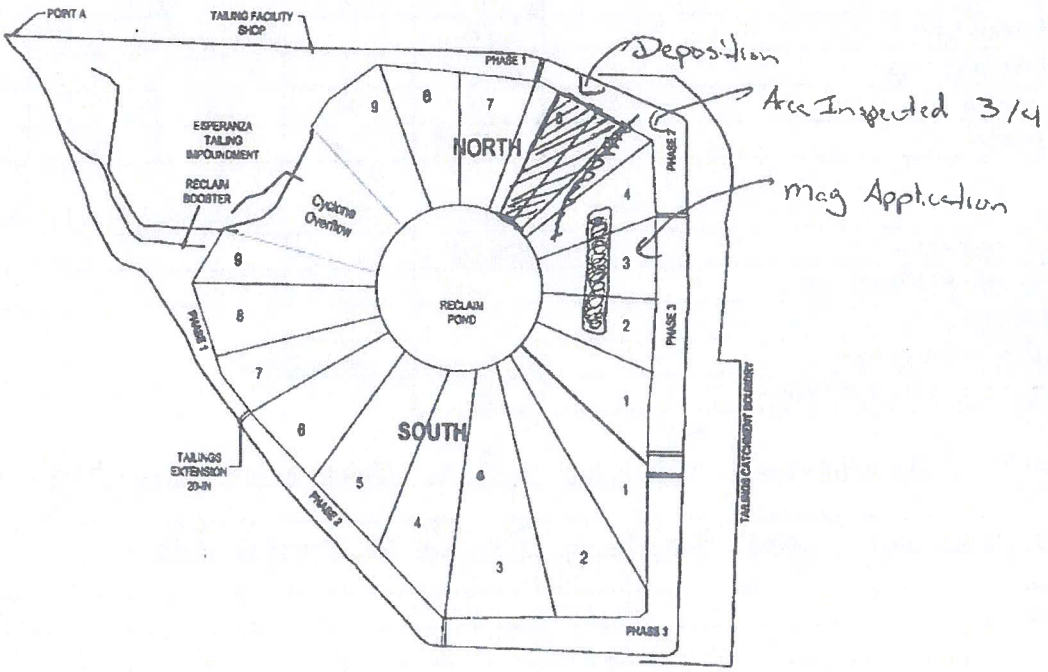
Inspection Action Plan: 05 went down with an oil leak on nightshift
06 ran 2 loads of manual application and moved to regular application / Down twice due to electrical issues
07 waiting on parts / 08 lost a hydraulic pump
09 running - went down two seperate times due to the tank sliding
~~10~~
Moving deposition every 6 hrs 1/2 spread at a time until we saturate the surface

3-11-2019 Revision #1

Tailings Impoundment Surface Inspection

Date: 10-10-19 Time: 11:00

Dam Inspected: North Inspected By: Deseik, Bryce, PEDQ



1	Recent Deposition (14 days or less)	No Action Required
2	Moist Surface	No Action Required
3	Established Salt Crust	No Action Required
4	Crusted with light surface sands (blown in/washed in)	Watch Area/Re-inspect in one week
5	Crust is breaking down	Watch Area/Re-inspect in one week
6	Piles of standing sands	Action Required - Deposition or application of suppressant
7	Broken down crust	
8	Area has had dust suppressant recently applied	Watch Area/Re-inspect in one week

All-Track	Availability	Running	Location	Loads	Tot Gal.
70105 (750gl)	Yes No	Yes No	North	4	3,000
70106 (750gl)	Yes No	Yes No		3	2,250
70107 (750gl)	Yes No	Yes No			
70108 (750gl)	Yes No	Yes No			
70109 (1500gl)	Yes No	Yes No			
70110 (750gl)	Yes No	Yes No	→	4	3,000

TOTAL = 8,250

H2O Trucks	Availability	Running	Loads
73737 (8000gl)	Yes No	Yes No	
73738 (8000gl)	Yes No	Yes No	16
74188 (5000gl)	Yes No	Yes No	3+1
74194 (5000gl)	Yes No	Yes No	4
74197 (8000gl)	Yes No	Yes No	
Rental			

Inspection Action Plan: All the All-Trucks went down on nightshift except 10. Empire brought out additional support to fix downed equipment. 07 Parts should be in tomorrow and 08 will be down into next week. Moving deposition to WE corner then going back to normal depo

3-11-2019 Revision #1