

Freeport-McMoRan Chino Mines Company
P.O. Box 10.
Bayard, NM 88023

Sherry Burt-Kested
Manager, Environmental Services
Telephone: 575-912-5927
e-mail: sburtkest@fmi.com

November 1, 2021

Certified Mail #70182290000160738815

Mr. Kurt Vollbrecht, Manager
New Mexico Environment Department
Ground Water Quality Bureau
Mining Environmental Compliance Section
P. O. Box 5624
Santa Fe, New Mexico 87502

Dear Mr. Vollbrecht:

**Re: Annual Monitoring Report, Groundhog Mine Site IRA
Hanover-Whitewater Creeks Investigation Unit, Chino AOC**

Freeport-McMoRan Chino Mines Company (Chino) submits the attached Annual Monitoring Report for the completed Groundhog Mine Site Interim Remedial Action (IRA) for the monitoring period ending September 30, 2021. The Groundhog Mine Site IRA was completed by Chino pursuant to requirements of the Administrative Order on Consent between the New Mexico Environment Department (NMED) and Chino.

As per Section 6.0 of both the IRA Completion Report and of the Completion Report for the Osceolla, CG Bell, and Tenderfoot B Stockpiles IRA dated June 10, 2009, this annual monitoring report includes the bulleted information listed below.

- Data tabulation sheet of analytical results screened against NM Groundwater Quality Standards from monitoring well and surface water samples collected at the Groundhog Mine Site;
- Copies of the original laboratory data sheets;
- Figure 1 illustrates locations for all of the IRA sites.

The annual vegetation monitoring for both IRAs has been completed and documented along with the five year quantitative vegetation survey in a report submitted September 30, 2016. NMED approved the *Vegetation Monitoring Report for the Groundhog Mine Site and Small Historic Stockpile Sites Interim Remedial Action* in a letter dated August 31, 2017 and no further annual vegetation surveys are required as provided in the IRA Completion Reports.

The attached ground water quality data are for monitor wells GH-2004-2S and GH-2004-2D. See Figure 1 for well locations. Beginning in 2009 shallow ground water quality began to increase in concentrations for cadmium, manganese, sulfate, TDS, and zinc. This is being addressed as part of the Discharge Permit (DP) 1340 Site Wide Abatement (SWA) process. A *Draft Revised Final Site Investigation Report* under, Site Wide Stage 1 Abatement dated March 30, 2016 is under review by NMED.

Water quality data in the table for the existing surface impoundment system are also provided. The surface impoundment sampling locations include the Lower Stormwater Sump "GH-Sump" and the Lower Stormwater Pond "GH-Lower Pond" which make up the Groundhog Mine seepage collection system located up gradient of, and including, the headwall. See Figure 1. Surface water from this collection system when present is pumped to Reservoir 17 for use as process water.

Chino has continued monitoring surface water quality for improvements from remediation at this seepage collection system for fourteen years as it is the downstream drainage endpoint for the Groundhog Mine Site. Sample results are provided in this annual report, as per the Groundhog IRA Completion Report, to document improving water quality. Upon reaching water quality standards, and following the Record Of Decision, the watershed surface water from the remediated mine site runoff, as per the completion report, would flow into Whitewater Creek. Currently the operational pipelines for the Chino mill divide the IRA site and the Groundhog Mine seepage collection system. Thus, the Groundhog Lower Stormwater Pond is now utilized by mine operations as a containment for upset conditions in the event of a pipeline break as part of the "pipeline spill containment system" under Discharge Permit 213. The Groundhog Lower Pond, and the upstream natural drainage comprising the collection system, will no longer be included in the Groundhog Mine IRA as the remedial objectives are not in alignment with active operational site. See Figure 2.

In alignment with comments made by NMED in a letter dated March 21, 2018, Chino will request the Groundhog Lower Pond collection system be removed from the oversight of the AOC and placed under Discharge Permit (DP) 213. To address this portion of the IRA site that is part of active operations, the Groundhog Lower Pond collection system will be explicitly included in the pending renewal for DP-213.

If you require additional information regarding this submittal, please contact Ms. Pam Pinson at (575) 912-5213.

Sincerely,

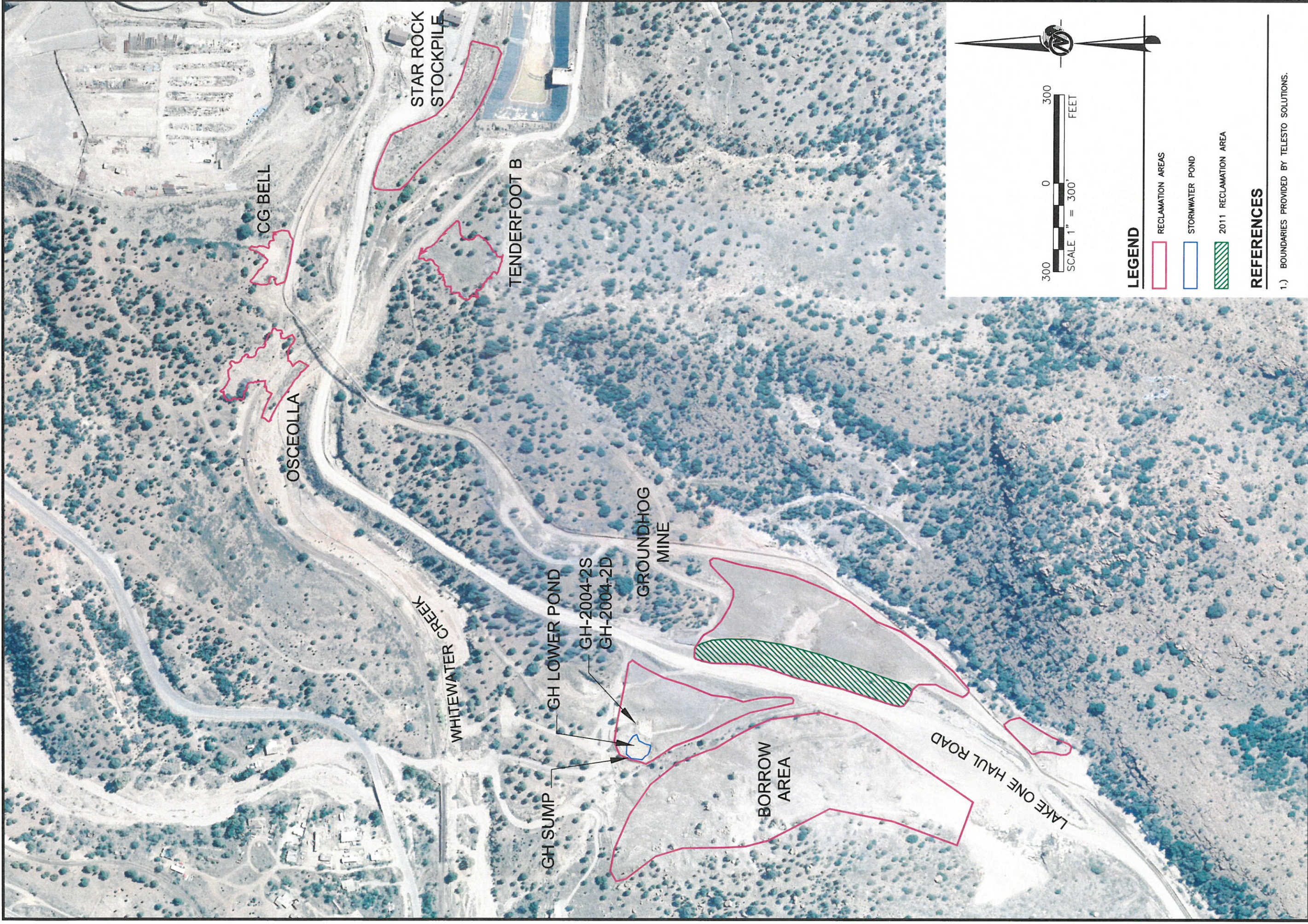


Sherry Burt-Kested, Manager

SBK:pp
Attachments
20211029-001

xc: David Mercer, NMED (4 copies)
Joseph Fox, NMED (via email)
D.J. Ennis, Mining & Minerals Division, NMEMNRD (via email)
Petra Sanchez, Environmental Protection Agency (via email)
Christian Krueger, Chino (via email)
Steward, Mike, FMI (via email)

Drawing file: Figure01_102014.dwg Oct 29, 2014 7:48am



LEGEND

- RECLAMATION AREAS
- STORMWATER POND
- 2011 RECLAMATION AREA

REFERENCES

1.) BOUNDARIES PROVIDED BY TELESTO SOLUTIONS.

TITLE

**ANNUAL MONITORING OF INTERIM
REMEDIAL ACTION SITES
LOCATION MAP**

PROJECT No.	141-1160
FILE No.	Figure01.dwg
REV. 0	SCALE AS SHOWN
DESIGN	DR 10/28/10
CADD	CM 10/20/14
CHECK	EC 10/20/14
REVIEW	DR 10/20/14

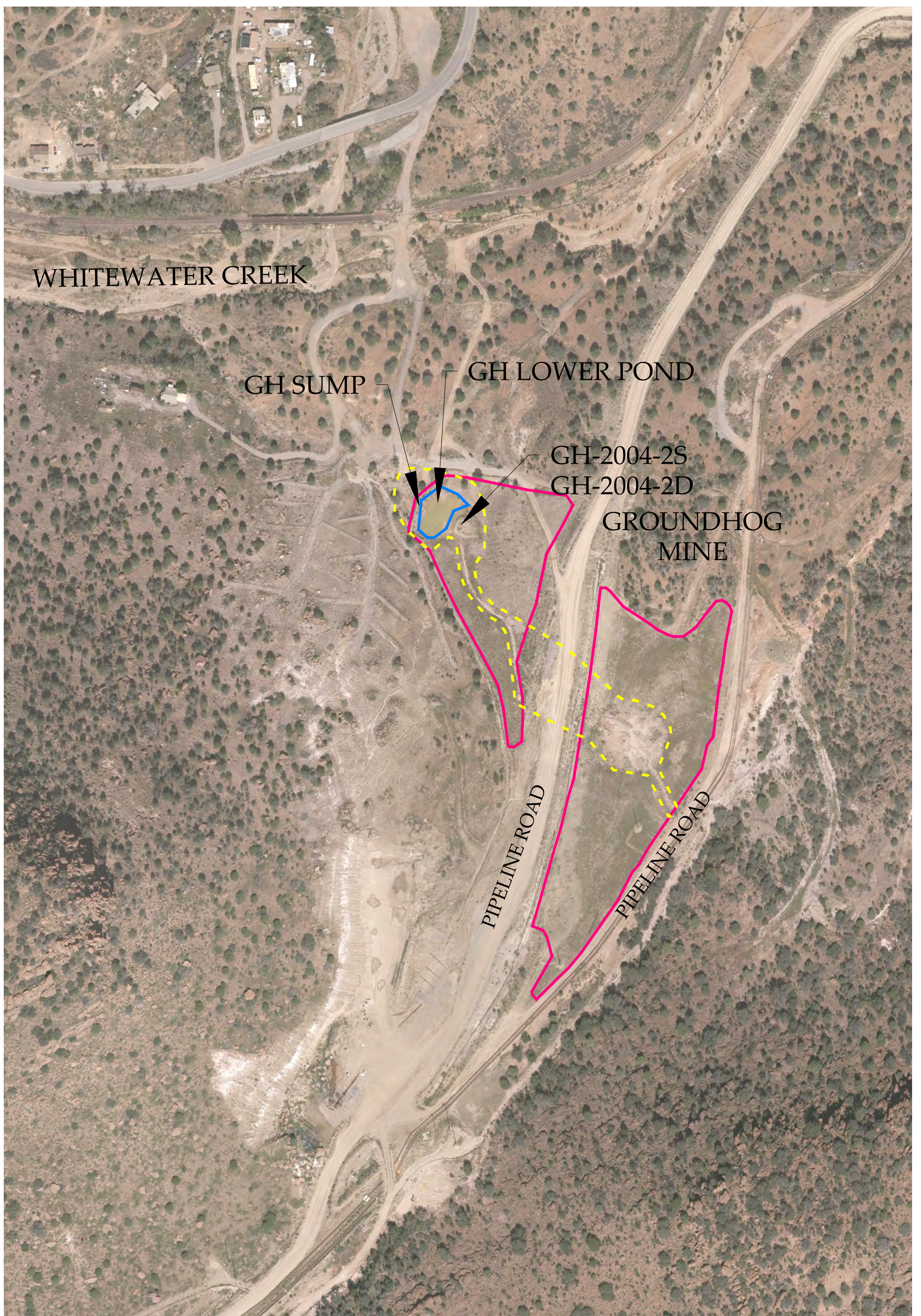
FIGURE 1

PROJECT



GROUNDHOG MINE AND SMALL
HISTORIC STOCKPILES IRAS
GRANT COUNTY, NEW MEXICO





Legend

- - - Proposed Operations Area/Pipeline Spill Containment System
- Reclaimed Area
- Pond



Figure 2

Scale: As Noted	Date: 10-31-2017	Notes:
Dept: Environmental Services		
Drawn By: SMG	Checked By: PDP	

Freeport-McMoRan Chino Mines Company

Groundhog Mine IRA Annual Report

October 30, 2021

Site Number	Sample ID	Sample Date	Comments	Ca, Diss (mg/L)	Cd, Diss (mg/l)	Co, Diss (mg/l)	Cu, Diss (mg/l)	F, Tot_ (mg/l)	Fe, Diss (mg/l)	Mg, Diss (mg/L)	Mn, Diss (mg/l)	Ni, Diss (mg/l)	Pb, Diss (mg/l)	Zn, Diss (mg/l)	pH, Field (su)	SO4, Tot_ (mg/l)	TDS (mg/l)	Cond, Fld (micromho)	Water Temp (Cent)	Well Collar Level (ft msl)	Well Depth (ft)	Depth to Water (ft)
WQCC Water Quality Standard					0.01	0.05	1	1.6	1		0.2	0.2	0.05	10	6- 9	600	1000					
GH-2004-2D	235809	10/28/2004		NA	0.0044	<0.006	0.0049	<1	<0.02	NA	0.0591	<0.01	<0.005	0.743	6.63	1780	2580	2292	17.3	6009.7	157.6	62
GH-2004-2D	245863	5/17/2005		NA	0.0027	<0.006	<0.01	<0.5	0.089	NA	0.374	<0.01	<0.005	0.654	6.76	1640	2440	2339	17.4	6003.74	147.6	44.5
GH-2004-2D	270674	10/25/2005		NA	0.0074	<0.006	<0.01	1.03	<0.06	NA	0.213	<0.01	0.009	1.65	6.62	1620	2530	2354	17.4	6003.74	147.6	46.3
GH-2004-2D	276910	3/14/2006		NA	0.0087	<0.006	<0.01	0.2	<0.06	NA	0.129	<0.01	0.009	0.851	6.63	1600	2770	2334	17.2	6003.74	147.6	47.43
GH-2004-2D	283019	8/4/2006		NA	0.0119	<0.006	<0.01	<0.2	<0.06	NA	0.123	<0.01	0.0108	1	6.58	1590	2620	2384	17.6	6003.74	147.6	50.3
GH-2004-2D	299167	2/6/2007		NA	0.0095	<0.006	<0.01	<0.2	<0.06	NA	0.108	<0.01	0.0091	0.903	6.53	1660	2630	2372	17.3	6003.74	147.6	43.03
GH-2004-2D	305946	7/23/2007		NA	0.011	<0.006	<0.01	<0.5	<0.06	NA	0.0899	<0.01	0.011	0.935	6.72	1640	2700	2432	18.1	6003.74	147.6	43.45
GH-2004-2D	316507	3/25/2008		NA	0.0105	<0.006	<0.01	<0.2	<0.06	NA	0.0555	<0.01	0.0086	0.82	6.79	1760	2700	2304	17	6003.74	147.6	44.7
GH-2004-2D	320089	10/28/2008		NA	0.0094	<0.006	<0.01	<0.5	<0.06	NA	0.112	<0.01	0.011	0.866	6.63	1990	2700	2351	17.2	6003.74	147.6	41.42
GH-2004-2D	321236	03/23/2009		NA	0.0072	<0.006	0.015	0.107	<0.06	NA	0.254	<0.01	<0.0075	0.904	6.82	1570	2690	2348	17.2	6003.74	147.6	44.8
GH-2004-2D	322688	09/30/2009		494	0.0101	<0.006	0.016	<0.5	<0.06	121	0.139	<0.01	<0.0075	0.873	6.43	1560	2730	2405	17.8	6003.74	147.6	48.08
GH-2004-2D	323312	03/11/2010		491	0.0116	<0.0061	0.013	<0.2	<0.061	118	0.0689	<0.01	0.008	0.838	6.77	1710	2680	2382	16.9	6003.74	147.6	48.22
GH-2004-2D	324880	09/20/2010		515	0.0117	<0.006	<0.01	<0.5	<0.06	125	0.0606	<0.01	0.0108	0.775	6.81	1660	2760	2422	18.7	6003.74	147.6	44.74
GH-2004-2D	326361	03/02/2011		509	0.0122	<0.006	<0.01	<0.5	<0.06	118	0.0703	<0.01	0.0134	0.855	6.73	1620	2540	2367	17.5	6003.74	147.6	47.99
GH-2004-2D	327872	09/02/2011		489	0.0098	<0.006	0.01	<0.1	<0.06	113	0.0474	<0.01	<0.0075	0.782	6.75	1640	2660	2416	18.9	6003.74	147.6	50.32
GH-2004-2D	329325	03/22/2012		527	0.0118	<0.006	<0.01	<0.5	<0.06	122	0.0626	<0.01	0.0096	0.804	6.63	1,750	2,710	2,272	17.9	6003.74	147.6	45.34
GH-2004-2D	330950	09/06/2012		525	0.0119	<0.006	<0.01	<0.5	<0.06	123	0.0484	<0.01	0.009	0.852	6.72	1,800	2,640	2,467	19.3	6003.74	147.6	49.13
GH-2004-2D	332598	03/11/2013		540	0.0136	<0.006	0.011	<0.5	<0.06	130	0.0496	<0.01	0.0144	0.912	6.69	1,780	2,720	2,389	18	6003.74	147.6	52.56
GH-2004-2D	334321	09/18/2013		541	0.0143	<0.006	<0.01	1.01	<0.06	127	0.0635	<0.01	0.012	0.912	6.69	1,780	2,720	2,428	17.9	6003.74	147.6	50.28
GH-2004-2D	335938	03/06/2014		512	0.0156	<0.006	<0.01	0.96	<0.06	122	0.0932	<0.01	0.0091	0.883	6.63	1,720	2,570	2,361	17.9	6003.74	147.6	47
GH-2004-2D	337693	09/09/2014		521	0.0148	<0.006	<0.01	<0.5	<0.06	124	0.064	<0.01	<0.0075	0.843	6.75	1,750	2,680	2,404	18.3	6003.74	147.6	50.24
GH-2004-2D	339360	03/12/2015		503	0.0119	<0.006	<0.01	<0.5	<0.06	118	0.0436	<0.01	<0.0075	0.801	6.79	1,700	2,440	2,247	16.9	6003.74	147.6	45.65
GH-2004-2D	341186	09/02/2015		489	0.0147	<0.006	<0.01	<0.5	<0.06	112	0.0507	<0.01	<0.0075	0.874	6.71	1,730	2,580	2,396	19.3	6003.74	147.6	49.32
GH-2004-2D	343006	03/03/2016		486	0.0154	<0.006	<0.01	0.732	<0.06	115	0.0539	<0.01	<0.0075	0.956	6.75	1,710	2,610	2,310	18	6003.74	147.6	49.74
GH-2004-2D	345111	09/13/2016		505	0.0146	<0.006	<0.01	<0.1	<0.1	116	0.0276	<0.01	<0.0075	0.79	6.74	1,650	2,530	2,260	17.4	6003.74	147.6	54.09
GH-2004-2D	347288	06/01/2017		498	0.0151	<0.006	<0.01	0.577	<0.1	118	0.0484	<0.01	0.0089	0.889	6.74	1,690	2,540	2,450	17.6	6003.74	147.6	44.35
GH-2004-2D	349336	09/12/2017		522	0.0151	<0.006	<0.01	0.185	<0.1	127	0.0829	<0.01	<0.0075	0.866	6.65	44	2,500	2,539	18.8	6003.74	147.6	44.21
GH-2004-2D	351227	03/21/2018		515	0.0142	<0.006	<0.01	<0.5	<0.1	113	0.0517	<0.01	<0.0075	0.878	6.77	2,030	2,490	2,504	17.6	6003.74	147.6	48.47
GH-2004-2D	352966	09/24/2018		460	<0.002	<0.006	<0.01	<0.1	<0.1	108	0.129	<0.01	<0.0075	0.117	7.01	1,490	2,440	2,279	17.7	6003.74	147.6	46.7
GH-2004-2D	354773	03/15/2019		480	<0.002	<0.006	<0.01	0.138	<0.1	109	0.212	<0.01	<0.0075	<0.01	6.55	1,500	2,330	2,661	16.2	6003.74	147.6	65.27
GH-2004-2D	356619	09/17/2019		464	<0.002	<0.006	<0.01	0.111	<0.1	107	0.107	<0.01	<0.0075	0.291	6.37	1,550	2,530	3,370	18.3	6003.74	147.6	47.71
GH-2004-2D	358230	03/27/2020		473	<0.002	<0.006	<0.01	0.243	<0.1	116	0.0952	<0.01	<0.0075	0.504	6.42	1,490	2,370	2,335	17.8	6003.74	147.6	39.6
GH-2004-2D	359910	09/26/2020		417	<0.002	<0.006	<0.01	0.321	<0.1	105	0.0773	<0.01	<0.0075	0.546	6.83	1,340	3,050	2,148	19	6003.74	147.6	46.31
GH-2004-2D	361587	03/25/2021		456	<0.002	<0.006	<0.01	0.192	<0.1	97.8	0.122	<0.01	<0.0075	0.223	6.8	1,430	2,270	1,968	17.4	6003.74	147.6	53.1
GH-2004-2D	367151	09/14/2021		448	<0.002	<0.006	<0.01	0.172	<0.1	104	0.0843	<0.01	<0.0075	0.463	6.59	1,490	2,140	2,311	17.8	6003.74	147.6	NA
GH-2004-2S	236057	10/28/2004		NA	0.0153	<0.006	0.007	0.31	<0.02	NA	0.703	<0.01	<0.005	2.15	7.07	1460	2120	2019	17	6009.7	**	53.25
GH-2004-2S	245864	5/17/2005		NA	0.0029	<0.006	0.014	<0.5	<0.06	NA	0.0826	<0.01	<0.005	0.371	7.39	1360	2080	2046	17.4	6003.74	83	46.73
GH-2004-2S	270675	10/25/2005		NA	0.0026	<0.006	<0.01	1.02	<0.06	NA	0.0321	<0.01	<0.0075	0.421	6.99	1390	2160	2152	17.3	6003.74	83	40.16
GH-2004-2S	276911	3/14/2006		NA	0.0027	<0.006	<0.01	0.73	<0.06	NA	0.0216	<0.01	<0.008	0.291	7.26	1410	2240	2204	17.1	6003.74	83	40.64
GH-2004-2S	283020	8/4/2006		NA	0.0027	<0.006	<0.01	<0.2	<0.06	NA	0.011	<0.01	<0.0075	0.359	7.27	1390	2240	2203	17.8	6003.74	83	43.84
GH-2004-2S	299168	2/6/2007		NA	0.0031	0.01	0.111	1.16	<0.06	NA	0.564	<0.01	<0.0075	0.557	6.53	1410	2220	2142	17.4	6003.74	83	37.08
GH-2004-2S	305947	7/23/2007		NA	<0.002	<0.006	<0.01	<0.5	<0.06	NA	<0.004	<0.01	<0.008	0.226	7.03	1440	2300	2279	17.7	6003.74	83	36.89
GH-2004-2S	316508	3/25/2008		NA	0.0052	<0.006	0.065	<0.5	0.092	NA	0.389	<0.01	<0.0075	1.36	7.23	1970	3000	2648	16.3	6003.74	83	37.75
GH-2004-2S	320090	10/28/2008		NA	0.0022	<0.006	0.011	<0.5	<0.06	NA	0.0547	<0.01	<0.0075	0.318	7.07	1870	2900	2650	17.8	6003.74	83	59.59
GH-2004-2S	321237	03/23/2009		NA	0.0068	<0.006	0.051	<0.1	<0.06	NA	0.916	<0.01	<0.0075	1.63	7.02	1720	2810	2554	16.9	6003.74	83	37.27

Freeport-McMoRan Chino Mines Company
Groundhog Mine IRA Annual Report
October 30, 2021

Site Number	Sample ID	Sample Date	Comments	Ca, Diss (mg/L)	Cd, Diss (mg/l)	Co, Diss (mg/l)	Cu, Diss (mg/l)	F, Tot_ (mg/l)	Fe, Diss (mg/l)	Mg, Diss (mg/L)	Mn, Diss (mg/l)	Ni, Diss (mg/l)	Pb, Diss (mg/l)	Zn, Diss (mg/l)	pH, Field (su)	SO4, Tot_ (mg/l)	TDS (mg/l)	Cond, Fld (micromho)	Water Temp (Cent)	Well Collar Level (ft msl)	Well Depth (ft)	Depth to Water (ft)
WQCC Water Quality Standard					0.01	0.05	1	1.6	1		0.2	0.2	0.05	10	6-9	600	1000					
GH-Lower Pond ²	335940	03/06/2014		333	0.0055	<0.006	0.051	1.52	<0.06	59.6	0.0924	<0.01	<0.0075	0.554	8.03	1,090	1,650	1,574	16.5	surface	surface	surface
GH-Lower Pond ²	337695	09/09/2014		127	0.0055	<0.006	0.045	0.95	<0.06	19.5	0.812	<0.01	<0.0075	0.35	7.79	406	607	772	22.7	surface	surface	surface
GH-Lower Pond ²	339362	03/12/2015		251	0.0377	0.0069	0.0354	1	<0.06	50.9	4.88	<0.01	<0.0075	3.66	7.18	873	1,260	1,157	13.6	surface	surface	surface
GH-Lower Pond ²	341188	09/01/2015		83.2	0.0047	<0.006	0.0282	0.67	<0.06	13	0.92	<0.01	<0.0075	0.266	8.58	269	406	585	26.3	surface	surface	surface
GH-Lower Pond ²	343008	03/04/2016		191	0.0043	<0.006	0.0199	0.936	<0.06	32	0.292	<0.01	<0.0075	0.216	8.27	622	956	911	13.1	surface	surface	surface
GH-Lower Pond ²	345113	09/13/2016		108	0.0028	<0.006	0.0207	0.555	<0.1	16.3	0.467	<0.01	<0.0075	0.067	7.78	310	486	606	19.7	surface	surface	surface
GH-Lower Pond ²	347290	04/28/2017	Dry		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
GH-Lower Pond ²	349338	09/12/2017		109	<0.002	<0.006	0.0137	0.621	<0.1	17.4	0.144	<0.01	<0.0075	0.056	7.2	339	507	761	24.2	surface	surface	surface



Freeport McMoRan - Chino Mines
PO Box 10
Bayard, NM 88023

Project Name: Chino Routine
Work Order: **X1C0509**
Reported: 13-Apr-21 17:09

ANALYTICAL REPORT FOR SAMPLES

COC Number: 8904

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
361593 / Equipment Blank - Chino	X1C0509-01	Water	25-Mar-21 12:05	LS	30-Mar-2021	
361594 / Field Blank - Chino	X1C0509-02	Water	25-Mar-21 11:58	LS	30-Mar-2021	
361587 / GH-2004-2D	X1C0509-03	Water	25-Mar-21 11:57	LS	30-Mar-2021	
361588 / GH-2004-2S	X1C0509-04	Water	25-Mar-21 11:30	LS	30-Mar-2021	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested.

Sample preparation is defined by the client as per their Data Quality Objectives.

This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.

Analyses were performed in accordance with SVL standard operating procedures and calibrations were performed and met SVL internal QC criteria.

The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

This report shall not be reproduced except in full, without the written approval of SVL Analytical, Inc.

Case Narrative: X1C0509

The state of origin only accredits for drinking water analyses.



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net

Freeport McMoRan - Chino Mines
PO Box 10
Bayard, NM 88023

Project Name: Chino Routine
Work Order: **X1C0509**
Reported: 13-Apr-21 17:09

Client Sample ID: **361593 : Equipment Blank - Chino**
SVL Sample ID: **X1C0509-01 (Water)**

Sampled: 25-Mar-21 12:05
Received: 30-Mar-21
Sampled By: LS

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
SM 2540 C	Total Diss. Solids	< 10	mg/L	10			X114089	TJL	04/01/21 13:30	
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	3.29	mg/L	0.30	0.18		X114111	RS	03/31/21 11:54	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dave Tryon
Project Manager



Freeport McMoRan - Chino Mines
PO Box 10
Bayard, NM 88023

Project Name: Chino Routine
Work Order: **X1C0509**
Reported: 13-Apr-21 17:09

Client Sample ID: **361594 : Field Blank - Chino**
SVL Sample ID: **X1C0509-02 (Water)**

Sampled: 25-Mar-21 11:58
Received: 30-Mar-21
Sampled By: LS

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
SM 2540 C	Total Diss. Solids	2200	mg/L	40			X114089	TJL	04/01/21 13:30	D2
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	1420	mg/L	15.0	9.00	50	X114111	RS	03/31/21 12:46	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dave Tryon
Project Manager



Freeport McMoRan - Chino Mines
PO Box 10
Bayard, NM 88023

Project Name: Chino Routine
Work Order: **X1C0509**
Reported: 13-Apr-21 17:09

Client Sample ID: **361587 : GH-2004-2D**
SVL Sample ID: **X1C0509-03 (Water)**

Sampled: 25-Mar-21 11:57
Received: 30-Mar-21
Sampled By: LS

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Dissolved)										
EPA 200.7	Cadmium	< 0.0020	mg/L	0.0020	0.0016		X114049	AS	04/08/21 12:07	
EPA 200.7	Calcium	456	mg/L	0.100	0.069		X114049	AS	04/08/21 12:07	
EPA 200.7	Cobalt	< 0.0060	mg/L	0.0060	0.0046		X114049	AS	04/08/21 12:07	
EPA 200.7	Copper	< 0.0100	mg/L	0.0100	0.0027		X114049	AS	04/08/21 12:07	
EPA 200.7	Iron	< 0.100	mg/L	0.100	0.056		X114049	AS	04/08/21 12:07	
EPA 200.7	Lead	< 0.0075	mg/L	0.0075	0.0049		X114049	AS	04/08/21 12:07	
EPA 200.7	Magnesium	97.8	mg/L	0.500	0.090		X114049	AS	04/08/21 12:07	
EPA 200.7	Manganese	0.122	mg/L	0.0080	0.0034		X114049	AS	04/08/21 12:07	
EPA 200.7	Nickel	< 0.0100	mg/L	0.0100	0.0048		X114049	AS	04/08/21 12:07	
EPA 200.7	Zinc	0.223	mg/L	0.0100	0.0054		X114049	AS	04/08/21 12:07	

Classical Chemistry Parameters

SM 2540 C	Total Diss. Solids	2270	mg/L	40			X114089	TJL	04/01/21 13:30	D2
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Anions by Ion Chromatography

EPA 300.0	Fluoride	0.192	mg/L	0.100	0.062		X114111	RS	03/31/21 13:04	
EPA 300.0	Sulfate as SO4	1430	mg/L	15.0	9.00	50	X114111	RS	03/31/21 13:21	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dave Tryon
Project Manager



Freeport McMoRan - Chino Mines
PO Box 10
Bayard, NM 88023

Project Name: Chino Routine
Work Order: **X1C0509**
Reported: 13-Apr-21 17:09

Client Sample ID: **361588 : GH-2004-2S**
SVL Sample ID: **X1C0509-04 (Water)**

Sampled: 25-Mar-21 11:30
Received: 30-Mar-21
Sampled By: LS

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Dissolved)										
EPA 200.7	Cadmium	0.0117	mg/L	0.0020	0.0016		X114049	AS	04/08/21 12:10	
EPA 200.7	Calcium	522	mg/L	0.100	0.069		X114049	AS	04/08/21 12:10	
EPA 200.7	Cobalt	< 0.0060	mg/L	0.0060	0.0046		X114049	AS	04/08/21 12:10	
EPA 200.7	Copper	0.0258	mg/L	0.0100	0.0027		X114049	AS	04/08/21 12:10	
EPA 200.7	Iron	< 0.100	mg/L	0.100	0.056		X114049	AS	04/08/21 12:10	
EPA 200.7	Lead	< 0.0075	mg/L	0.0075	0.0049		X114049	AS	04/08/21 12:10	
EPA 200.7	Magnesium	154	mg/L	0.500	0.090		X114049	AS	04/08/21 12:10	
EPA 200.7	Manganese	10.0	mg/L	0.0080	0.0034		X114049	AS	04/08/21 12:10	
EPA 200.7	Nickel	0.0353	mg/L	0.0100	0.0048		X114049	AS	04/08/21 12:10	
EPA 200.7	Zinc	44.4	mg/L	0.100	0.0540	10	X114049	AS	04/08/21 12:44	D2
Classical Chemistry Parameters										
SM 2540 C	Total Diss. Solids	3040	mg/L	40			X114089	TJL	04/01/21 13:30	D2
Anions by Ion Chromatography										
EPA 300.0	Fluoride	1.17	mg/L	0.100	0.062		X114111	RS	03/31/21 13:39	
EPA 300.0	Sulfate as SO4	2140	mg/L	30.0	18.0	100	X114111	RS	03/31/21 13:56	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Dave Tryon
Project Manager



Freeport McMoRan - Chino Mines
 PO Box 10
 Bayard, NM 88023

Project Name: Chino Routine
 Work Order: **X1C0509**
 Reported: 13-Apr-21 17:09

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
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Metals (Dissolved)

EPA 200.7	Cadmium	mg/L	<0.0020	0.0016	0.0020	X114049	08-Apr-21	
EPA 200.7	Calcium	mg/L	<0.100	0.069	0.100	X114049	08-Apr-21	
EPA 200.7	Cobalt	mg/L	<0.0060	0.0046	0.0060	X114049	08-Apr-21	
EPA 200.7	Copper	mg/L	<0.0100	0.0027	0.0100	X114049	08-Apr-21	
EPA 200.7	Iron	mg/L	<0.100	0.056	0.100	X114049	08-Apr-21	
EPA 200.7	Lead	mg/L	<0.0075	0.0049	0.0075	X114049	08-Apr-21	
EPA 200.7	Magnesium	mg/L	<0.500	0.090	0.500	X114049	08-Apr-21	
EPA 200.7	Manganese	mg/L	<0.0080	0.0034	0.0080	X114049	08-Apr-21	
EPA 200.7	Nickel	mg/L	<0.0100	0.0048	0.0100	X114049	08-Apr-21	
EPA 200.7	Zinc	mg/L	<0.0100	0.0054	0.0100	X114049	08-Apr-21	

Classical Chemistry Parameters

SM 2540 C	Total Diss. Solids	mg/L	<10		10	X114089	01-Apr-21	
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Anions by Ion Chromatography

EPA 300.0	Fluoride	mg/L	<0.100	0.062	0.100	X114111	31-Mar-21	
EPA 300.0	Sulfate as SO4	mg/L	<0.30	0.18	0.30	X114111	31-Mar-21	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
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Metals (Dissolved)

EPA 200.7	Cadmium	mg/L	0.928	1.00	92.8	85 - 115	X114049	08-Apr-21	
EPA 200.7	Calcium	mg/L	18.9	20.0	94.3	85 - 115	X114049	08-Apr-21	
EPA 200.7	Cobalt	mg/L	0.894	1.00	89.4	85 - 115	X114049	08-Apr-21	
EPA 200.7	Copper	mg/L	0.928	1.00	92.8	85 - 115	X114049	08-Apr-21	
EPA 200.7	Iron	mg/L	9.16	10.0	91.6	85 - 115	X114049	08-Apr-21	
EPA 200.7	Lead	mg/L	0.923	1.00	92.3	85 - 115	X114049	08-Apr-21	
EPA 200.7	Magnesium	mg/L	18.6	20.0	92.9	85 - 115	X114049	08-Apr-21	
EPA 200.7	Manganese	mg/L	0.943	1.00	94.3	85 - 115	X114049	08-Apr-21	
EPA 200.7	Nickel	mg/L	0.904	1.00	90.4	85 - 115	X114049	08-Apr-21	
EPA 200.7	Zinc	mg/L	0.922	1.00	92.2	85 - 115	X114049	08-Apr-21	

Anions by Ion Chromatography

EPA 300.0	Fluoride	mg/L	1.96	2.00	97.9	90 - 110	X114111	31-Mar-21	
EPA 300.0	Sulfate as SO4	mg/L	10.3	10.0	103	90 - 110	X114111	31-Mar-21	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch and Source ID	Analyzed	Notes
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Classical Chemistry Parameters

SM 2540 C	Total Diss. Solids	mg/L	485	494	1.8	10	X114089 - X1C0505-02	01-Apr-21	
SM 2540 C	Total Diss. Solids	mg/L	620	613	1.1	10	X114089 - X1C0505-07	01-Apr-21	



Freeport McMoRan - Chino Mines
 PO Box 10
 Bayard, NM 88023

Project Name: Chino Routine
 Work Order: **X1C0509**
 Reported: 13-Apr-21 17:09

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch and Source ID	Analyzed	Notes
Metals (Dissolved)										
EPA 200.7	Cadmium	mg/L	0.980	<0.0020	1.00	98.0	70 - 130	X114049 - X1C0496-01	08-Apr-21	
EPA 200.7	Calcium	mg/L	75.6	56.1	20.0	97.6	70 - 130	X114049 - X1C0496-01	08-Apr-21	
EPA 200.7	Cobalt	mg/L	0.934	0.0068	1.00	92.7	70 - 130	X114049 - X1C0496-01	08-Apr-21	
EPA 200.7	Copper	mg/L	1.00	<0.0100	1.00	100	70 - 130	X114049 - X1C0496-01	08-Apr-21	
EPA 200.7	Iron	mg/L	10.2	0.205	10.0	99.8	70 - 130	X114049 - X1C0496-01	08-Apr-21	
EPA 200.7	Lead	mg/L	0.969	<0.0075	1.00	96.9	70 - 130	X114049 - X1C0496-01	08-Apr-21	
EPA 200.7	Magnesium	mg/L	30.9	11.2	20.0	98.5	70 - 130	X114049 - X1C0496-01	08-Apr-21	
EPA 200.7	Manganese	mg/L	3.61	2.70	1.00	90.3	70 - 130	X114049 - X1C0496-01	08-Apr-21	
EPA 200.7	Nickel	mg/L	0.940	<0.0100	1.00	94.0	70 - 130	X114049 - X1C0496-01	08-Apr-21	
EPA 200.7	Zinc	mg/L	1.31	0.356	1.00	95.6	70 - 130	X114049 - X1C0496-01	08-Apr-21	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	mg/L	2.00	<0.100	2.00	100	90 - 110	X114111 - X1C0509-01	31-Mar-21	
EPA 300.0	Sulfate as SO4	mg/L	13.6	3.29	10.0	104	90 - 110	X114111 - X1C0509-01	31-Mar-21	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	RPD	RPD Limit	% Recovery	Batch and Source ID	Notes
Metals (Dissolved)										
EPA 200.7	Cadmium	mg/L	0.930	0.980	1.00	5.2	20	93.0	X114049 - X1C0496-01	
EPA 200.7	Calcium	mg/L	76.1	75.6	20.0	0.6	20	99.8	X114049 - X1C0496-01	
EPA 200.7	Cobalt	mg/L	0.888	0.934	1.00	5.0	20	88.1	X114049 - X1C0496-01	
EPA 200.7	Copper	mg/L	0.955	1.00	1.00	4.6	20	95.5	X114049 - X1C0496-01	
EPA 200.7	Iron	mg/L	9.70	10.2	10.0	4.9	20	95.0	X114049 - X1C0496-01	
EPA 200.7	Lead	mg/L	0.917	0.969	1.00	5.5	20	91.7	X114049 - X1C0496-01	
EPA 200.7	Magnesium	mg/L	30.4	30.9	20.0	1.7	20	96.0	X114049 - X1C0496-01	
EPA 200.7	Manganese	mg/L	3.61	3.61	1.00	0.0	20	90.4	X114049 - X1C0496-01	
EPA 200.7	Nickel	mg/L	0.892	0.940	1.00	5.2	20	89.2	X114049 - X1C0496-01	
EPA 200.7	Zinc	mg/L	1.28	1.31	1.00	2.5	20	92.3	X114049 - X1C0496-01	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	mg/L	2.02	2.00	2.00	1.2	20	101	X114111 - X1C0509-01	
EPA 300.0	Sulfate as SO4	mg/L	13.6	13.6	10.0	0.3	20	103	X114111 - X1C0509-01	



Freeport McMoRan - Chino Mines
PO Box 10
Bayard, NM 88023

Project Name: Chino Routine
Work Order: **X1C0509**
Reported: 13-Apr-21 17:09

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
0.30R>S	% recovery not applicable; spike level is less than 30% of the sample concentration
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable
