

RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

SMRD DOCKET NO. C14-0017-SC-01-F

**APPLICATION OF ALCOA INC. FOR PHASE I AND II RELEASE ON 84.6 ACRES,
PHASE II RELEASE ON 6,960.4 ACRES AND PHASE III RELEASE ON 871.7 ACRES,
PERMIT NO. 1F, SANDOW MINE, MILAM AND LEE COUNTIES, TEXAS**

**ORDER APPROVING RELEASE OF PHASE I, II AND III RECLAMATION
OBLIGATIONS**

Statement of the Case

ALCOA Inc. (Alcoa), P.O. Box 1491, Rockdale, Texas 76567 applied to the Railroad Commission of Texas (Commission), Surface Mining and Reclamation Division, for Phase I and II release of reclamation obligations on 84.6 acres, Phase II release of reclamation obligations on 6,960.4 acres and Phase III release of reclamation obligations on 871.7 acres for a total combined request of 7,916.7 acres within the Sandow Mine located in Milam and Lee Counties, Texas. The application is made pursuant to the Texas Surface Coal Mining and Reclamation Act, TEX. NAT. RES. CODE ANN. Ch. 134 (Vernon Supp. 2016), and "Coal Mining Regulations" Tex. R.R. Comm'n, 16 TEX. ADMIN. CODE Ch. 12 (Thomson West 2016).

Permit No. 1F currently authorizes surface coal mining operations at Alcoa's Sandow Mine within its 10,728.6-acre permit area. Copies of the application were filed in required County and Commission offices and distributed to applicable agencies for review and comment. No requests for hearing were filed following public notice. The only parties to the proceeding are Alcoa and the Commission's Surface Mining and Reclamation Division (Staff). There remain no outstanding issues between the parties. Based on the information provided by the application and the inspection of the area, Staff recommends release of Phase I reclamation obligations on 84.6 acres, Phase II release of reclamation obligations on 7,045.0 acres and Phase III release of reclamation obligations on 871.7 acres. The parties have filed waivers of preparation and circulation of a proposal for decision.

After consideration of the application and the Findings of Fact and Conclusions of Law, the Commission approves the release of reclamation obligations as recommended by Staff. Alcoa does not request adjustment to the approved reclamation bond at this time and no new bond has been submitted. An eligible bond reduction amount of \$9,410,421.42 may be determined.

SMRD Docket No. C14-0017-SC-01-F
Order Approving Release of Phase I, II and III Reclamation Obligations

Findings of Fact

Based on the evidence in the record the following Findings of Fact are made:

1. By letter dated June 11, 2014, Alcoa filed its application for Phase I release on 84.6 acres, Phase II release on 7,045.0 acres and Phase III release on 871.7 acres. The proposed release areas are located in Milam and Lee Counties, Texas, within the permit area of Permit No. 1F, Sandow Mine. The Mine encompasses 10,728.6 acres in Milam, Lee and Williamson Counties.
2. The application is made pursuant to Texas Surface Coal Mining and Reclamation Act, Tex. Nat. Res. Code Ann. Ch. 134 (Vernon Supp. 2016) (Act), and the Coal Mining Regulations, Tex. R.R. Comm'n, 16 Tex. Admin. Code Ch. 12 (Thomson West 2016). No filing fee is required. The application was properly certified in accordance with §12.312(a)(3).
3. By letter dated November 9, 2015, Alcoa submitted Supplement No. 1, containing additional information to address Staff's concerns raised in Staff's technical analysis (TA) issued October 22, 2015. Staff in its TA recommended release of Phase I reclamation obligations on 84.6 acres, but did not recommend Phase II release on 7,045.0 acres or Phase III release on 871.7 acres. Following Alcoa's submittal of Supplement No. 1, Staff filed a TA addendum on January 8, 2016. Staff concluded in the TA addendum that it recommended release of Phase I reclamation obligations on 84.6 acres, Phase II release of reclamation obligation on 7,045.0 acres and Phase III release of reclamation obligations on 871.7 acres.
4. Alcoa does not request a reduction in the amount of the approved reclamation bond. The existing reclamation bond in the form of a self-bond for the entire permit area, accepted by Order dated April 8, 2015, is in the amount of \$27,250,000.
5. The Phase I proposed release on 84.6 acres, Phase II release on 7,045.0 acres and Phase III release on 871.7 acres is detailed in the Staff Evaluation, Attachment I (Maps 1-4) of the TA Addendum, and the RCT Enforcement Staff Inspection report contained in Attachment III.
6. Phase I and II release are recommended on 35.6 acres recommended for release are currently bonded at the mined rate of \$5,526 per acre, and Phase I and II release on 49.0 acres recommended for release are currently bonded at the disturbed rate of \$4,169 per acre., Phase II release on 5,692.5 acres recommended for release are currently bonded at the mined Phase I rate of \$2,210 per acre and Phase II release on 1,267.9 acres recommended for release are currently bonded at the disturbed Phase I rate of \$1,688 per acre. Phase III release on 860.6 acres recommended for release are currently bonded at the mined Phase II rate of \$1,048 per acre and Phase III release on 11.1 acres recommended for release are currently bonded at the disturbed Phase III rate of \$1,048 per acre.

SMRD Docket No. C14-0017-SC-01-F
Order Approving Release of Phase I, II and III Reclamation Obligations

7. The post-mine land use within the various proposed release areas consists of 6,750.7 acres of pastureland, 326.1 acres of fish and wildlife habitat, 821.1 acres of developed water resources and 18.8 acres of industrial/commercial land uses.
8. By letters dated January 26, 2015, Alcoa sent notice to owners of interests in the areas requested for release and adjacent lands.
9. Notice of application was published once a week for four consecutive weeks (January 29, and February 5, 12 and 19, 2015) in both the *Rockdale Reporter* and the *Lexington Leader*. Each newspaper is a newspaper of general circulation in both Milam and Lee Counties, which are the locality of the proposed various phase combined 7,916.7 acre release areas of the permitted mine. The notice of application contains all information required by the Act and Regulations for notice of application for bond release applications. Alcoa submitted an affidavit of publication with clippings. The published notice is adequate notification of the request for release. The notice included the elements required by §134.129 of the Act and §12.312(a)(2) of the Regulations: the name of the permittee, the precise location of the land affected, the total number of acres, permit number at the time of application and date approved, the amount of bond filed, the type and appropriate dates reclamation work was performed, and a description of the results achieved as they relate to the approved reclamation plan. The notice contained information concerning the applicant, the location and boundaries of the permit area, the availability of the application for inspection, and the address where comments should be sent. Alcoa submitted proof of publication to the Commission by letter dated February 23, 2015.
10. Copies of the application were filed for public review at the main office of the Railroad Commission of Texas at 1701 North Congress, William B. Travis Building, Austin, Texas 78701, the office of the Milam County Clerk, 100 South Fannin, Cameron, Texas 75840 and the office of the Lee County Clerk, 151 East Hempstead Street, Giddings, Texas 78942.
11. Alcoa sent notification letters to local governmental bodies and other agencies and authorities as required by §12.312(a)(2). Notice was sent to the Milam County Judge and Commissioners Court, Lee County Judge and Commissioners Court, Brazos River Authority, Texas General Land Office, Texas Commission on Environmental Quality, Natural Resources Conservation Service, Environmental Protection Agency, Texas State Soil and Water Conservation Board, Texas Department of Transportation, U.S. Army Corp of Engineers, Taylor Soil and Water Conservation District, and Burleson-Lee Soil and Water Conservation District.
12. The Surface Mining and Reclamation Division mailed letters pursuant to §12.312(b) dated June 13, 2014, to owners of the surface and leaseholders of the area requested for release and to the Office of Surface Mining Reclamation and Enforcement, Tulsa Field Office (OSM). The notification stated that a release had been requested and, pursuant to

SMRD Docket No. C14-0017-SC-01-F**Order Approving Release of Phase I, II and III Reclamation Obligations**

- §12.3129b)(1), advised the recipients of the opportunity to participate in the on-site inspection scheduled for July 7, 2014. In addition, the Commission sent notice by certified mail to the Milam County Judge and Lee County Judge on February 27, 2015 as required by §12.313(d).
13. No adverse comments or written objections were filed regarding the request for release. No requests for hearing or informal conference were filed pursuant to §12.313(d).
 14. On July 7-8, 2014, SMRD Inspection and Enforcement staff, accompanied by representatives of Alcoa, conducted its inspection of the area requested for release. The field report found that the proposed various Phase release areas were eligible for the requested release, pending correction of minor mapping issues and Staff review.
 15. No concerns with erosion were noted by Staff and no rills or gullies were observed or noted in Staff's inspection (§12.389).
 16. All acreage requested for release from Phase I reclamation obligations (84.6 acres) has met Phase I requirements for backfilling, regrading, and drainage control as required by §12.312(a)1) of the Regulations and may be approved for Phase I release.
 - (1) The areas requested for Phase I release are stable with no active erosion evident.
 - (2) Mining occurred on 35.6 acres of the proposed 84.6 acre Phase I release area from 1988 to 2005, with the balance of the area disturbed by mining related activities. Final grading of the proposed area was accomplished from 1989 to 2011 and is in accordance with the approved permit. The area has been regraded to its approximate original contour, all highwalls have been eliminated, suitable topsoil and subsoil material has been placed over regraded soil, and no cut-and-fill terraces have been constructed [§12.385].
 - (3) Soil testing did not indicate the presence of acid and/or toxic-forming materials in the top four feet of postmine soil [§12.386]. By letters dated June 23, 2006, June 15, 2012, April 9, 2008, August 4, 1995, July 28, 2008, June 1, 2001, March 4, 2005, April 4, 2005, March 23, 2014, May 18, 2007, October 20, 1998, April 20, 2011, June 5, 2013, and February 26, 2009, SMRD determined and notified Alcoa that the soil testing data did not indicate the presence of acid and/or toxic-forming materials in the top four feet of postmine soil.
 - (4) One diversion, Diversion DDI-03, is located within the proposed release area and was approved by Commission Order dated March 10, 2003 [§12.341].

SMRD Docket No. C14-0017-SC-01-F
Order Approving Release of Phase I, II and III Reclamation Obligations

- (5) Portions of three permanent roads are located within the areas proposed for Phase I release of reclamation liability. RR-F3 and RR-North were approved August 19, 2009 and FM 112 Entry was approved March 10, 2011 and are shown in photographs 1, 2 and 3 of the inspection report [§12.400(f)].
 - (6) No permanent impoundments are located within the proposed Phase I Area [§12.347(b)].
 - (7) One permanent drop structure and one spillway are located within the proposed Phase I Area. Drop Structure SD-8 was approved August 19, 2009 and is shown in photograph 4 of the inspection report. The E-Area Endlake Spillway was approved August 19, 2009 and is shown in photographs 5 and 6 in the inspection report.
 - (8) Surface water runoff from all areas proposed for Phase I release of reclamation obligation flows to the C-Area Endlake, E-Area Endlake, H-Area Endlake, I-Area Endlake, Pond RI-1, Pond 020 and/or Pond 007 [§12.343].
 - (9) There are no waste disposal areas within the proposed Phase I release area. [§12.375].
17. All acreage requested for release from Phase II reclamation obligations (7,045 acres) have met the Phase II requirements for revegetation and consists of 18.8 acres of industrial/commercial postmine land use, 6,106.6 acres of pastureland, 175.9 acres of fish and wildlife habitat and 748.7 acres of developed water resources. Vegetation has been established in accordance with the approved reclamation plan, and applicable ground cover performance standards have been met. The area proposed for Phase II release is not contributing suspended solids to stream flow outside the permitted area in excess of regulatory limits. Thus, the 7,045.0-acre area requested for Phase II release of reclamation obligation has met Phase II revegetation requirements [§12.312(a)(2)] and the requirement that the area not contribute suspended solids to stream flow outside the permit area in excess of the requirements set by the Act §134.092(a)(10) and 16 TEX. ADMIN. CODE Ch. 12, Subchapter K.
- (1) No rills or gullies were observed during the inspection of the areas proposed for release [§12.389].
 - (2) The 7,045 acres proposed for Phase II release have a postmine landuse consisting of 18.8 acres of industrial/commercial, 6,101.6 acres of pastureland, 175.9 acres of fish and wildlife habitat and 748.7 acres of developed water resources. The land has been reclaimed to and managed in accordance with the approved postmine land uses [§§12.147 and 12.399].

SMRD Docket No. C14-0017-SC-01-F

Order Approving Release of Phase I, II and III Reclamation Obligations

- (3) Reclamation efforts within the proposed Phase II release area has been inspected monthly since 1988. The vegetation within the proposed release area consisted of hybrid bermudagrass with interseeded clover, Kleingrass, Wilman Lovegrass, Switchgrass, Indiangrass, Old World bluestem and Sideoats Grama in the pastureland areas and Alamo Switchgrass, Kleingrass, Wilman Lovegrass, Old World Bluestem, Sideoats Grama, Lometa Indiangrass and Little Bluestem in the Fish and Wildlife Habitat areas. All vegetation appears to be healthy and self-sustaining [§§12.3290 – 12.395].
- (4) The vegetation in the pastureland and wildlife habitat land use areas [§12.395(c)(2)], and the vegetation in the I/C and developed water resources land use areas are adequate to control erosion.
- (5) No portion of the area proposed for Phase II release of reclamation liability have soils classified as prime farmland prior to mining [§§12.620 – 12.625].
- (6) Drainage from the area proposed for Phase II release flows into the E-Area Endlake, I-South Endlake, G-Area Endlake, H-Area Endlake, Pond SP-33, Pond RI-1, Pond RH1-B1, Pond 020, Pond 013 and/or Pond 014. No silt dams are present within the area proposed for Phase II release of reclamation liability. The proposed release areas not covered by water have been stabilized with vegetation and road surfacing to reduce the potential for contributing suspended solids to stream flow [§12.340].
- (7) There are numerous permanent structures located within the proposed Phase II release area, including three permanent creek reroutes, ten diversions, ten drop structures, one spillway, two storage yards, twenty-four ponds, eight endlakes, twelve roads and twenty-one service roads. These structures are summarized in the following table [§§12.154, 12.347, 12.400 and 12.401]:

Structure Name	Type	Date	Structure Name	Type	Date
Cottonwood Creek	Creek Reroute	8/19/2009	SD-1	Drop Structure	8/19/2009
Walleye Creek	Creek Reroute	8/19/2009	SD-8	Drop Structure	8/19/2009
East Yegua Creek	Creek Reroute	6/26/2013	SD-3	Drop Structure	8/19/2009
DDI-03	Diversion	3/10/2003	SD-5	Drop Structure	8/19/2009
DDI-05A	Diversion	10/21/2008	SD6	Drop Structure	8/19/2009
DDI-10	Diversion	10/21/2008	ND2	Drop Structure	1/18/2013

SMRD Docket No. C14-0017-SC-01-F
Order Approving Release of Phase I, II and III Reclamation Obligations

DBH-1	Diversion	8/19/2009	ND3	Drop Structure	1/18/2013
CDH-4	Diversion	8/19/2009	SD-2	Drop Structure	8/19/2009
CDC3	Diversion	12/2/1996	ND8	Drop Structure	1/18/2013
Pond 026 Inlet	Diversion	12/9/2011	SD-4	Drop Structure	8/19/2009
Pond 016 Outlet	Diversion	8/19/2009	E-Area Endlake Spillway	Spillway	8/19/2009
Pond 013 Inlet	Diversion	8/19/2009	Area-A Hay Storage Area	Yard	8/19/2009
Pond 031 Inlet	Diversion	5/12/2000	F4 Hay Storage Area	Yard	12/23/2009
STK-1	Pond	39139	RF4 Basin 1	Pond	8/16/1994
SP-33	Pond	10/15/2008	Pond 013	Pond	8/19/2009
RI-1	Pond	10/11/2010	I-Area Endlake	Endlake	8/19/2009
RH-8	Pond	8/19/2009	H-Area Endlake	Endlake	8/19/2009
RH-5	Pond	8/19/2009	G-Area Endlake	Endlake	4/1/2004
RH-4	Pond	8/19/2009	FG-2 Endlake	Endlake	8/19/2009
RH-3	Pond	8/19/2009	FG-1 Endlake	Endlake	8/19/2009
RH1-B1	Pond	8/19/2009	F Endlake	Endlake	8/19/2009
Pond 020	Pond	8/19/2009	North F Endlake	Endlake	8/19/2009
Pond 007	Pond	8/19/2009	E-Area Endlake	Endlake	8/19/2009
RA-1	Pond	8/19/2009	RR-C6	Road	10/21/2014
RA-2	Pond	8/19/2009	RR020	Road	8/19/2009
Pond 026	Pond	8/19/2009	Pond 014 Access Road	Road	8/21/2002
C3W	Pond	5/20/2005	RR-A3	Road	8/19/2009
Pond 016	Pond	8/19/2009	RR-F1	Road	8/19/2009
RE-5	Pond	7/18/2003	RR-F3	Road	8/19/2009
RE-4	Pond	7/18/2003	RR-G1	Road	4/1/2004

SMRD Docket No. C14-0017-SC-01-F

Order Approving Release of Phase I, II and III Reclamation Obligations

RE-3	Pond	8/5/2003	RR-H1	Road	8/19/2009
Pond 014	Pond	8/19/2009	FM 112 Entry	Road	3/10/2011
Pond C2C3	Pond	7/29/2003	C2G2	Road	10/8/2009
Pond A1	Pond	2/15/1996	C4 Ramp	Road	8/19/2009
Pond RF3B1	Pond	6/2/1993	RR-C7	Road	10/21/2014
SRH-5	Service Road	10/8/2009	RR026	Service Road	8/19/2009
SRH-7	Service Road	10/8/2009	RR-C3	Service Road	8/19/2009
SRH-1	Service Road	10/8/2009	RR-C1	Service Road	8/19/2009
SRH-7A	Service Road	10/8/2009	RR-North	Service Road	8/19/2009
C2G3	Service Road	10/8/2009	ACE-1	Service Road	8/19/2009
RR-020	Service Road	8/31/2009	RR-E1	Service Road	7/18/2003
RR-G1	Service Road	4/1/2004	C2E2	Service Road	8/19/2009

18. The 871.7 acres proposed for Phase III release have a postmine landuse comprised of 649.1 acres of pastureland, 150.2 acres of fish and wildlife habitat and 72.4 acres of developed water resources. The 871.7 acres are included in three land management units (LMUs), designated as G03-P, E06-P and E06-NP. These LMUs were accepted into the extended responsibility period (ERP) on March 20, 2003 and January 9, 2006 respectively. By letters dated August 16, 2005, April 14, 2008 and September 26, 2008, SMRD determined that the vegetation data for LMU G03-P met performance standards in accordance with §12.395(c)(2). By letters dated July 1, 2010, November 5, 2010 and July 20, 2011, SMRD determined that the vegetation data for LMUs E06-P and E06-NP met the performance standards in accordance with §12.395(c)(2). A ground-cover evaluation for this area was approved by Staff letter dated July 1, 2010, and the ground cover for this area is adequate to control erosion.
19. No portions of the areas proposed for Phase III release of reclamation liability were reclaimed as prime farmland (§§12.201 and 12.620-12.625).
20. The groundwater hydrologic balance has been protected as required by §12.348 and the re-established postmine ground-water system is adequate for the proposed postmine uses of the 871.7 acres requested for Phase III release.

SMRD Docket No. C14-0017-SC-01-F**Order Approving Release of Phase I, II and III Reclamation Obligations**

- (1) In addressing requirements of §12.348, Alcoa has submitted groundwater monitoring data for the overburden, spoil and underburden aquifers within and adjacent to the Sandow Mine.
 - (2) Groundwater monitoring for the area proposed for Phase III release has been performed in accordance with the provisions of the approved permit. Long-term groundwater monitoring records have been reviewed by Staff on a quarterly basis.
 - (3) The premine overburden aquifers in the reclaimed area have been destroyed; however, they constituted only minor aquifers. The underburden aquifers in the Sandow Mine area are sands of the Simsboro Formation, underlying the lignite bearing Calvert Bluff Formation and separated by clays five feet or more in thickness. The sandier unit (Simsboro) is separated from the mined and affected area by an underlay of several tens of feet in thickness and is fairly well developed in this region in the lower Wilcox Group outcrop.
 - (4) Alcoa provided an analysis of the groundwater data from pertinent wells by letter dated June 11, 2014. The water levels in the spoil monitoring wells adjacent or within the area proposed for Phase III release show measurable increases in water levels since the time of mining, for those wells possessing long-term records. The water levels in the spoil monitoring wells appear to be stable or are approaching the post-recovery stage. Seasonal rises and drops in water levels appear to be occurring, indicating that the groundwater system within the spoil has stabilized or is approaching stability
 - (5) Long-term quarterly monitoring data for most of the overburden and underburden hydrologic units within and adjacent to the proposed Phase III release area do not indicate that any significant impacts have occurred to water quantity or quality. The average TDS concentrations from overburden wells that have been continuously monitored since the mid-1990s or early 2000s have remained generally similar, ranging from 40 mg/L to 3,800 mg/L, depending on the particular overburden stratum in which the well has been completed. Staff notes no groundwater problems that would preclude approval of Phase III release.
21. Alcoa has conducted surface mining activities in accordance with §12.313(a)(2), §12.313(a)(3) and §12.349 to protect surface water quality and quantity for the acreage proposed for Phase I, II and III release.
- (1) The areas proposed for release from reclamation liability are located in both the north and south areas of the Sandow Mine. The parcels proposed for release of reclamation in the north mine area drain to East Yegua Creek. The parcels proposed for release of reclamation in the south mine area drain to Middle Yegua Creek.

SMRD Docket No. C14-0017-SC-01-F**Order Approving Release of Phase I, II and III Reclamation Obligations**

- (2) All discharge from the Sandow Mine flows to Somerville Lake on Yegua Creek (TCEQ Stream Segment No. 1212) and ultimately to the Brazos River.
- (3) TCEQ issued TPDES Permit No. 00395 to Alcoa for wastewater discharges from the Sandow Mine. Based upon monthly long-term and quarterly monitoring data, Alcoa established that wastewater discharges do not exceed the Texas Pollutant Discharge Elimination System (TPDES) water quality effluent standards and are within limitations established for TPDES permit No. 00395 for pH, total suspended solids (TSS) and iron (Fe). The average TSS concentrations are below or on the low range of the premine data in the PHC determination. The long-term pond monitoring data do not indicate any trends for TSS, pH and Fe concentrations nor are these constituents influenced by flow.
- (4) During the period of record, runoff from the area proposed for release from reclamation obligations was controlled by several ponds. Discharge in the north area of Sandow Mine (East Yegua Basin) flows into the C-Area and/or E-Area Endlake and Ham Branch. Discharge from Permanent Impoundments 015, 016, RE-4, RE-5, RE1B1, RE-2, RE-3 and North Endlake flows into the E-Area Endlake. Discharge from Permanent Impoundments 026, A1, C3, C2C3 and C3W flows into the C-Area Endlake, and Permanent Impoundments 013 and 014 discharge into Ham Branch.
- (5) Discharges in the south area of the Sandow Mine (Middle Yegua Creek) flow into the H-Area and/or I-South Endlakes, Camp Branch and Walleye Creek. Discharge from Permanent Impoundment STK-1 flows into the I-South Endlake. Alcoa provides discharge data for Impoundment 063, which was incorporated into the I-South Endlake during construction. Discharge from Permanent Impoundments 004A, 006, 007, 009, RF2B1, RF3B1, RF4B1, RF4B2, RH3, RH4, RH5, RH8, RH1-B1 and RG2B1 and the North F, F, FG-1, FG-2 and G-Area Endlakes flow into the H-Area Endlake. Permanent Impoundment 020 discharges into Camp Branch and Permanent Impoundments SP-33 and RI-1 discharge into Walleye Creek. Pond discharge in the Sandow mine is currently monitored under TPDES Permit No. 00395.
- (6) Quarterly pond data for pH, electric conductivity, settleable solids (SS) and TDS are provided in Table 1. Staff's evaluation of the quarterly pond data focuses on pH, SS and TDS because of the correlation between electric conductivity and TDS. The quarterly pond data in Table 1 demonstrates that pH levels in the permanent impoundments and end lakes remained within the range (6.0-9.0 s.u.) in TPDES Permit No. WQ0000395000, with the exception of single water samples at Permanent Impoundments C3W (9.2 s.u. on January 21, 2003), C2C3 (9.3 s.u. on November 14, 2002), RE3 (9.3 s.u. on June 13, 2002), RF2B2 (10.3 s.u. on August 7, 2002), and RF4B1 (9.2 s.u. on June 9, 2006), and FG-1 End Lake (9.5 s.u. on May 23, 2011). The data also show that SS concentrations in the

SMRD Docket No. C14-0017-SC-01-F**Order Approving Release of Phase I, II and III Reclamation Obligations**

permanent impoundments and end lakes have remained consistently under 0.1 ml/L and meet the TPDES effluent limitation of 0.5 ml/L.

- (7) The average TDS concentrations for Permanent Impoundments 013, 014, RE1B1 and RE2 do not exceed the stream segment criterion of 400 mg/L. Permanent Impoundments 013 and 014 discharge into Ham Branch. Based on the flow patterns in the north area of the Sandow Mine, discharge from permanent impoundments in the watersheds of the C and E Area End Lakes (final discharge points at permit boundary) discharge in series, resulting in diluted TDS concentrations. The average concentration for the E-Area End Lake is 352.75 mg/L which meets stream segment criteria. Alcoa provides in Table 1 the results from a single quarterly sample from the C-Area End Lake (775 mg/L). In its analysis of TDS concentrations at LTSM Station No. 7, Alcoa indicates that it began taking daily TDS concentration readings in April of 2013. Alcoa also indicates that the average daily reading at the C-Area End Lake is 768 mg/L and provides a graph depicting TDS concentrations in the lake between 700 mg/L and 800 mg/L demonstrating that TDS concentrations in the C-Area End Lake have remained stable.
- (8) Alcoa provides in Table 1 quarterly pond data for Permanent Impoundments 063 and RF2B2 with average TDS concentrations of 436.75 mg/L and 87 mg/L. Permanent Impoundment 063 was incorporated into the I-South End Lake during construction and Permanent Impoundment RF2B2 was reclaimed in January 2004. The average TDS concentrations for permanent impoundments discharging into Camp Branch and Walleye Creek meet stream segment criteria (400 mg/L) as well as the average concentrations for Permanent Impoundment STK-1 and the I-South End Lake. Permanent Impoundments with average TDS concentrations in excess of 400 mg/L are located in the watershed of the H-Area End Lake. In a similar fashion as in the north area of the Sandow Mine, discharge from these permanent impoundments flows in series and is diluted until reaching the H-Area End Lake (final discharge point at permit boundary). The average concentration for the H-Area End Lake is 472.4 mg/L and the TDS concentrations from samples taken in 2015 show a downward trend.
- (9) The quarterly pond data submitted by Alcoa for permanent impoundments and end lakes located in the East Yegua Basin and Middle Yegua Basin meet effluent limitations for pH and SS in TPDES Permit No. WQ0000395000. The quarterly pond data also demonstrate that the average TDS concentrations for permanent impoundments discharging into Ham Creek, Camp Creek and Walleye Creek meet stream segment criteria (400 mg/L) as well as the average TDS concentrations for the E-Area End Lake and I-South End Lake (final discharge points). The quarterly pond data also show that TDS concentrations at the C-Area End Lake (final discharge point) are higher than the stream segment criteria but stable, and the average concentration at the H-Area End Lake (final discharge point) is slightly higher but showing a downward trend.

SMRD Docket No. C14-0017-SC-01-F**Order Approving Release of Phase I, II and III Reclamation Obligations**

- (10) The proposed 871.7 acre Phase III release area includes 853.4 acres in the north area of Sandow Mine and 18.3 acres in the south portion of the mine. Alcoa provided long-term surface water monitoring data from 16 surface water stations. Staff's evaluation focused on only four of these stations closest to the proposed release areas; LTSM Station Nos. 6 and 7 in the Sandow north area and LTSM Station Nos. 1 and 2 in the Sandow south area. LTSM Station No. 7 is located at East Yegua Creek and Hwy 77 and monitors disturbed runoff from the proposed north release area. LTSM Station No. 6 is located at the upper end of Country Club Creek, immediately downstream of Alcoa Lake and upstream of the permit area. Country Club creek drains to East Yegua Creek, then to Somerville Lake and to Yegua Creek as Stream Segment 1212 (Somerville Lake) and Stream Segment 1211 (Yegua Creek). Data from LTSM Station No. 6 was provided to demonstrate upstream water quality for the north mine area. LTSM Station No. 1 is located on Walleye Creek at CR 447, upstream of the permit area. LTSM Station No. 2 is located on Walleye Creek downstream of the H-Area Endlake at FM 112. Walleye Creek drains to Middle Yegua Creek which drains to East Yegua Creek, thence to Somerville Lake and Yegua Creek in the Brazos River Basin. Data from LTSM Station No. 1 is provided to demonstrate upstream water quality, while LTSM Station No. 2 monitors all disturbed runoff from the proposed release area.
- (11) In the initial TA, Staff did not recommend Phase III release from reclamation obligations for the proposed 853.4 acres located in the north area of the Sandow Mine because Alcoa did not explain or document the correlation between the increasing trends in chloride and sulfate concentrations at LTSM Station No. 7 and the application of fertilizer to reclaimed areas. In Supplement No. 2, Alcoa did not provide a correlation between the increasing trends in chloride and sulfate concentrations to the application of fertilizer to reclaimed areas. However, LTSM Station No. 13 is located approximately 1.5 miles downstream of LTSM Station No. 7 on East Yegua Creek and Alcoa indicates that the baseline data recorded at LTSM Station No. 13 in 1977 have an average concentration of 1,078 mg/L. Based on this information, Alcoa concludes that sulfate concentrations are naturally occurring and are a result of the movement of sulfate materials in runoff. Alcoa also indicates that sulfate concentrations were at their lowest during the time that depressurization pumping was occurring and are now lower than those observed during the baseline period for LTSM Station No. 13. Depressurization activities ceased at the Sandow Mine in 2009. Baseline data for chloride were not collected at LTSM Station No. 7 but the average chloride concentration at LTSM Station No. 13 for the baseline period is 322 mg/L. According to Alcoa, the trend in chloride concentration is similar to the trend for sulfates. Staff graphed the TDS, chloride and sulfate concentrations at LTSM Station No. 7 for the past 15 years. The graph shows the correlation between TDS, chloride and sulfates. Although Alcoa did not provide a correlation between the increasing trends in chloride and sulfate concentrations to the application of fertilizer in reclaimed

SMRD Docket No. C14-0017-SC-01-F**Order Approving Release of Phase I, II and III Reclamation Obligations**

areas, a correlation can be made between TDS concentration and chloride and sulfates because these ions are accounted for in the determination of TDS concentration. The trend lines on the graph for TDS, chloride and sulfates over time show a correlation between the three parameters and a decreasing trend starting approximately in 2014. In the initial TA, Staff indicated that starting on May 22, 2012, TDS concentrations at LTSM Station No. 7 remained near the baseline average of 791 mg/L. Due to the stable TDS concentrations at LTSM Station No. 7 Staff anticipates that chloride and sulfate concentrations will also remain stable.

- (12) According to these data, the range of pH at LTSM Station Nos. 1 and 2 falls within TCEQ stream segment standard. Chloride concentrations at LTSM Station No. 1 are lower than the concentrations at LTSM No. 2 and recent stream-monitoring data indicate an increasing trend in chloride concentration at both LTSM stations. A comparison of chloride concentrations to baseline data cannot be made because baseline data were not recorded for this parameter at LTSM Station Nos. 1 and 2; however, the average annual chloride concentrations at LTSM Station Nos. 1 (6 mg/L) and 2 (75.1 mg/L) are below the criterion for Stream Segment No. 1212 (100 mg/L). Sulfate concentrations at downstream LTSM Station No. 2 are higher than concentrations at LTSM Station No. 1. Stream-monitoring data indicate an increasing trend in sulfate at LTSM Station No. 2 starting in January 2015 and a consistent sulfate concentration of approximately 3 mg/L at LTSM Station No. 1 since January 2013. Baseline data were not recorded for sulfate at the LTSM stations during the monitoring period. The average sulfate concentration at LTSM Station No. 1 (8.9 mg/L) is lower than the criteria for Stream Segment No. 1212 (100 mg/L) while the average concentration at LTSM Station No. 2 (104.9 mg/L) is slightly higher. Total Fe concentrations are lower at LTSM Station No. 2 than at LTSM Station No. 1 with average Fe concentrations of 0.9 mg/L and 2.1 mg/L, respectively. Alcoa indicates that EPA drinking-water standards for human consumption recommend levels of Fe lower than 0.3 mg/L; however, recommended levels have not been established for livestock watering. Alcoa does not anticipate total Fe concentrations to have a negative impact on downstream water quality. Graphical analyses of Fe at both monitoring stations indicate an increasing trend in total Fe concentration at LTSM Station No. 1 (upstream) and a declining trend at LTSM Station No. 2 (downstream). Limited baseline data is available for LTSM Station No. 2. The baseline data have an average concentration of 1.5 mg/L which is higher than the average concentration of 0.9 mg/L for LTSM Station No. 2. TSS concentrations at LTSM Station No. 2 are lower than the concentrations recorded at LTSM Station No. 1. Alcoa's graphs of TSS vs. Flow depict decreasing trends in TSS concentrations at LTSM Station Nos. 1 and 2. The average TSS concentrations at LTSM Station Nos. 1 and 2 (134.1 mg/L and 23.2 mg/L, respectively) are lower than the baseline average (120 mg/L) for Middle Yegua Creek listed in Table .146-26 of Permit No. 1F. The TSS data support Alcoa's conclusion regarding the improvement in TSS concentration due to the

SMRD Docket No. C14-0017-SC-01-F
Order Approving Release of Phase I, II and III Reclamation Obligations

construction of sedimentation ponds during mining and the establishment of vegetation during reclamation.

- (13) The flow-weighted average TDS concentration calculated for downstream LTSM Station No. 7 (613.8 mg/L) is greater than the flow-weighted average TDS concentration for upstream LTSM Station No. 6 (254.8 mg/L). A comparison of the average flow-weighted TDS concentration to stream segment criteria indicates that the TDS concentration at LTSM Station No. 7 is within the criteria specified for Stream Segment No. 1211 (640 mg/L, Yegua Creek, downstream of Somerville Lake) but exceeds the average annual maximum TDS concentration for Stream Segment No. 1212 (400 mg/L, Somerville Lake). In its analysis of the cumulative hydrologic impact (section 6.0 of the CHIA), Staff indicates that the effects of mining on the TDS concentrations measured at mass-balance location No. 2 (East Yegua Creek) could be as high as 223 mg/L, and anticipates an increase in the TDS concentration at Somerville Lake up to a maximum level of 230 mg/L, which is less than the maximum annual average concentration for Stream Segment No. 1212 (400 mg/L). The flow-weighted TDS concentrations at both LTSM Stations somewhat exceed the TDS concentration predicted in the CHIA at Somerville Lake. Alcoa's graphs of TDS vs. Flow show a downward trend in TDS concentration at LTSM Station No. 6 and upward trend at LTSM Station No. 7. In the application, Alcoa provides an explanation for the upward trend in TDS concentrations at LTSM Station No. 7. Alcoa indicates that the highest TDS concentrations occurred during the early monitoring period from 1979 to 1991 and began to decline between 1991 and 2008 due to discharge of water from depressurization activities into East Yegua Creek. Alcoa provides in the application a graph depicting annual depressurization flow and average annual TDS concentration. As depressurization ceased in 2009, TDS concentrations began to rise in response to decreased flows in East Yegua Creek and peaked in April 2010 (808 mg/L). No discharge was reported between April 2010 and May 22, 2012 due to an extended drought period at the Sandow Mine. Starting on May 22, 2012, flow measurements resumed at LTSM Station No. 7 and TDS concentrations have remained near the baseline average of 791 mg/L with a range between 750 mg/L and 834 mg/L. Alcoa also indicates that water quality in the C-Area End Lake will influence TDS concentrations in East Yegua Creek and provides a graph depicting daily TDS concentrations in the lake between April 17 and May 16, 2013. TDS readings in the lake during this period of record show an average of 768 mg/L. Alcoa expects TDS concentrations at LTSM Station No. 7 to remain near the levels observed during recent water samples and below baseline and early monitoring data.
- (14) The flow-weighted average TDS concentration calculated for downstream LTSM Station No. 2 (530 mg/L) is greater than the flow-weighted average TDS concentration for upstream LTSM Station No. 1 (243.8 mg/L). A comparison of the average flow-weighted TDS concentration to stream segment criteria indicates that the TDS concentration at LTSM Station No. 2 is within the criteria specified

SMRD Docket No. C14-0017-SC-01-F

Order Approving Release of Phase I, II and III Reclamation Obligations

for Stream Segment No. 1211 (640 mg/L, Yegua Creek, downstream of Somerville Lake) but exceeds the average annual maximum TDS concentration for Stream Segment No. 1212 (400 mg/L, Somerville Lake). In its analysis of the cumulative hydrologic impact (section 6.0 of the CHIA), Staff indicates that the effects of mining on the TDS concentrations measured at mass-balance location No. 1 (Middle Yegua Creek) could be as high as 480 mg/L, and anticipates an increase in the TDS concentration at Somerville Lake up to a maximum level of 230 mg/L, which is less than the maximum annual average concentration for Stream Segment No. 1212 (400 mg/L). The flow-weighted TDS concentrations at both LTSM stations exceed the TDS concentration predicted in the CHIA at Somerville Lake. However, Alcoa's graphs of TDS vs. Flow show a downward trend in TDS concentration at LTSM Station Nos. 1 and 2. Additionally, Table .146-26 in Permit No. IF indicates an average baseline TDS concentration for Middle Yegua Creek of 686 mg/L which is higher than the average TDS concentrations for LTSM Station Nos. 1 (243.8 mg/L) and 2 (530 mg/L). Alcoa anticipates TDS concentrations along the stream to remain near the levels in recent samples.

- (15) Runoff from the areas proposed for Phase III release from reclamation obligations in the north area of the Sandow Mine drains to the North and E-Area End Lakes. These two end lakes are covered under Water Rights Permit No. 5540. Runoff from the areas proposed for Phase III release from reclamation obligations in the south area of the Sandow Mine drains to the H-Area End Lake. This end lake is included in Water Rights Permit No. 12190. Alcoa provides an analysis of surface-water quantity in comparison to the PHC determination in Permit No. IF. In the analysis Alcoa indicates that increases in surface-water runoff will mitigate increases in evaporative losses. Based on the premine and postmine conditions considered in Table 146-25, Alcoa estimates the annual evaporation losses (1,817 ac-ft/yr) for all permanent impoundments to be approximately 2% in comparison to the combined average flows of USGS Stations 08109700 and 08109800 on East and Middle Yegua Creeks (84,000 ac-ft/yr). In its CHIA, Staff anticipated slight changes in the quantity of surface water available to downstream water users. Staff also determined that the amount of water stored in the impoundments and lost to evaporation is negligible (3.7% on Yegua Creek) when compared to the aggregate amounts of water originating from the drainage basins upstream of the Cumulative Impact Area (CIA).
- (16) Based on the available long-term, monitoring data, evaluation of the data supports the release of Phase II and Phase III reclamation obligations for the collective 7,916.7 acres.

SMRD Docket No. C14-0017-SC-01-F

Order Approving Release of Phase I, II and III Reclamation Obligations

22. Of the 84.6 acres proposed for Phase I and II release, 35.6 acres are bonded at the mined rate of \$5,526/acre and 49.0 acres are bonded at the disturbed rate of \$4,169/acre. Of the 6,960.4 acres proposed for Phase II release, 5,692.5 acres are bonded at the mined rate of \$2,210/acre and 1,267.9 acres are bonded at the disturbed rate of \$1,668/acre. Of the 871.7 acres proposed for Phase III release, 860.6 acres are bonded at the mined rate of \$1,048/acre and 11.1 acres are bonded at the disturbed rate of \$1,048/acre. If the subject application is approved by the Commission as proposed, Alcoa would be eligible to reduce its performance bond obligations by \$9,410,421.42, as shown in the following table:

Bond Reduction as Proposed

Phase Requested	Area Acres	Disturbance Category	Bonded Per Acre	Eligible Reduction Per Acre	Eligible Reduction
Phase I & II	35.6	Mined	\$5,526.00	\$3,315.60	\$118,035.36
Phase I & II	49.0	Disturbed	\$4,169.00	\$2,501.40	\$122,568.60
Phase II	5,692.5	Mined	\$2,210.00	\$1,162.00	\$6,614,685.00
Phase II	1,267.9	Disturbed	\$1,668.00	\$620.00	\$788,098.00
Phase III	860.6	Mined	\$1,048.00	\$1,048.00	\$901,908.80
Phase III	11.1	Disturbed	\$1,048.00	\$1,048.00	\$11,632.80
Subtotal					\$8,554,928.56
Admin. Costs (10%)					\$855,492.86
Total					\$9,410,421.42

23. The eligible bond reduction amount, based upon the Findings of Fact contained in this Order and Staff Calculations, is \$9,410,421.42. No reduction of the \$27,250,000 bond approved by order dated April 8, 2015 is requested in this application.
24. The notice of application for release did not include an eligible bond reduction requested and Alcoa has not requested an adjustment to the approved bond at this time. No replacement bond instrument has been filed.

SMRD Docket No. C14-0017-SC-01-F
Order Approving Release of Phase I, II and III Reclamation Obligations

Conclusions of Law

Based on the above Findings of Fact, the following Conclusions of Law are made:

1. Proper notice was provided for this request for release of reclamation obligations.
2. A public hearing on the request is not warranted.
3. Alcoa has complied with all applicable provisions of the Act and the Regulations for release of reclamation obligations for the areas requested for release as set out in the Findings of Fact.
4. The Commission may approve a release of reclamation obligations for Phase I reclamation obligations on 84.6 acres, Phase II reclamation obligations on 7,045.0 acres and Phase III reclamation obligations on 871.7 acres, for a total combined acreage of 7,916.7 acres, as set out in the Findings of Fact.
5. An eligible bond reduction amount for use in reclamation cost estimates of \$9,410,421.42 may be determined.

BE IT THEREFORE ORDERED BY THE RAILROAD COMMISSION OF TEXAS that the above Findings of Fact and Conclusions of Law are adopted;

BE IT FURTHER ORDERED that a release of Phase I reclamation obligations on 84.6 acres, release of Phase II reclamation obligations on 7,045.0 acres and release of Phase III reclamation obligations on 871.7 acres, for a total combined acreage of 7,916.7 acres, as set out in the Findings of Fact, is hereby approved;

BE IT FURTHER ORDERED that the current bond remains in effect according to its terms until the Commission approves a replacement bond;

BE IT FURTHER ORDERED that, as a result of the Phase I, II, and III release of a combined 7,916.7 acres, the Commission approves an eligible bond reduction amount of \$9,410,421.42;

**SMRD Docket No. C14-0017-SC-01-F
Order Approving Release of Phase I, II and III Reclamation Obligations**

BE IT FURTHER ORDERED that the Commission may vary the total amount of bond required from time to time as affected land acreage is increased or decreased or where the cost of reclamation changes; and

BE IT FURTHER ORDERED by the Commission that this order shall not be final and effective until 20 days after a party is notified of the Commission's order. A party is presumed to have been notified of the Commission's order three days after the date on which the notice is mailed. If a timely motion for rehearing is filed by any party of interest, this order shall not become final and effective until such motion is overruled, or if such motion is granted, this order shall be subject to further action by the Commission. Pursuant to TEX. GOV'T CODE §2001.146(e), the time allotted for Commission action on a motion for rehearing in this case prior to its being overruled by operation of law, is hereby extended until 90 days from the date the parties are notified of the order.

SIGNED this 12 day of April, 2016.

RAILROAD COMMISSION OF TEXAS



CHAIRMAN DAVID PORTER



COMMISSIONER CHRISTI CRADDICK



COMMISSIONER RYAN SITTON

ATTEST




SECRETARY