

**Table 1 Application and Revision Chronology, Pit 7 Reclamation Plan, TransAlta Coal Mine**

ACTION	DATE	COMMENTS RECEIVED FROM OSMRE
Submit <i>Pit 7 Reclamation Plan</i> to OSMRE	September 29, 2009	October 15, 2009 – Initial Response & Administrative Completeness Comments
Submit <i>Pit 7 Reclamation Plan</i> – Response to Administrative Completeness Comments	December 9, 2009	December 16, 2009 – Determination of Administrative Completeness September 23, 2010 & February 3, 2011 – Technical Review Comments
Submit <i>Pit 7 Reclamation Plan</i> – Response to Comments	June 23, 2011	December 8, 2011 – Technical Review Comments
Submit <i>Pit 7 Reclamation Plan</i> – Response to Comments	October 31, 2012	January 18, 2013 – Technical Review Comments
Submit <i>Pit 7 Reclamation Plan</i> – Response to Comments	April 11, 2013	June 6, 2013 – Technical Review Comments
Submit <i>Pit 7 Reclamation Plan</i> – Response to Comments	June 18, 2013	July 29, 2013 – Technical Review Comments
Submit <i>Pit 7 Reclamation Plan</i> – Response to Comments	October 14, 2013	January 23, 2014 – Technical Review Comments
Submit <i>Pit 7 Reclamation Plan</i> – Response to Comments (TCM 2014)	February 26, 2014	Application Technically Adequate; May 1, 2014

**Table 2 Proposed Pit 7 Lakeshore and Wetland Habitat Seed Mixtures<sup>(a)</sup>**

COMMON NAME	SCIENTIFIC NAME	INDICATOR STATUS <sup>(b)</sup>	MIX <sup>(c)</sup>
<b><i>Persistently wet areas</i></b>			
Slough sedge	<i>Carex obnupta</i>	OBL	35%
Small-fruited bulrush	<i>Scirpus microcarpus</i>	OBL	25%
Soft rush	<i>Juncus effusus</i>	FACW	15%
Water plantain	<i>Alisma plantago-aquatica</i>	OBL	15%
Creeping spike rush	<i>Eleocharis palustris</i>	OBL	10%
Application Rate (pounds per acre)			5-10
<b><i>Seasonally wet areas and wetland/upland transition zones</i></b>			
Red fescue	<i>Festuca rubra var. rubra</i>	FAC	70%
Tufted hairgrass	<i>Deschampsia cespitosa</i>	FACW	30%
Application Rate (pounds per acre)			20-30

(a) This table appears as Table 5.5-13a in TCM (2014).

(b) Indicator status notes: OBL=Obligate wetland; these species almost always occur under natural conditions in wetlands.

FACW=Facultative Wetland; usually found in wetlands, but occasionally found in non-wetlands. FACU=Facultative Upland, usually occur in non-wetlands, but occasionally found in wetlands. FAC = Equally likely to occur in wetlands and non-wetlands.

(c) Species mixes may be revised based on seed availability.

**Table 3 Proposed Pit 7 Aquatic and Emergent Shrub & Tree Species for Lake and Wetland Habitats<sup>(a)</sup>**

VEGETATION COMMUNITY	SCIENTIFIC NAME	COMMON NAME
Aquatic species	<i>Nuphar luteum</i>	Yellow pond lily
Aquatic species	<i>Potamogeton natans</i>	Floating-leaved pond weed
Emergent wetland	<i>Carex obnupta</i>	Slough sedge
Emergent wetland	<i>Carex pachystachya</i>	Thick-head sedge
Emergent wetland	<i>Carex stipata</i>	Saw-beaked sedge
Emergent wetland	<i>Carex utriculata</i>	Beaked sedge
Emergent wetland	<i>Carex vesicaria</i>	Inflated sedge
Emergent wetland	<i>Glyceria elata</i>	Tall mannagrass
Emergent wetland	<i>Glyceria grandis</i>	Reed mannagrass
Emergent wetland	<i>Juncus tenuis</i>	Slender rush
Emergent wetland	<i>Leersia oryzoides</i>	Rice cutgrass
Emergent wetland	<i>Lysichitum americanum</i>	Skunk cabbage
Emergent wetland	<i>Sagittaria latifolia</i>	Wapato
Emergent wetland	<i>Scirpus microcarpus</i>	Small-fruited bulrush
Emergent wetland	<i>Scirpus acutus</i>	Hardstem bulrush
Emergent wetland	<i>Scirpus validus</i>	Soft-stemmed bulrush
Emergent wetland	<i>Sparganium emersum</i>	Narrow-leaf burreed

(a) This table appears as Table 5.5-14a in TCM (2014).

Note: Final plant species list and numbers will be determined for the final design. General planting guideline is 2,000 individual aquatic and emergent plants per acre. Species additions and/or substitutions may occur based on site conditions.

**Table 4 Summary of Alternatives Considered**

RESOURCE	ENVIRONMENTAL IMPACT - PROPOSED ACTION: PIT 7 PLAN	ENVIRONMENTAL IMPACT - NO ACTION	COMMENTS
Topography, Geography, and Soils	Minor	Negligible to minor at the mine site. Potentially major at borrow source site.	With No Action, topographic impacts in the new borrow pit itself would be moderate to major.
Surface Water: flooding/stormflows	Minor	Moderate	With No Action, impacts depend on plan design and stormwater management. Offsite impacts to surface water from major excavation, stockpiling and hauling could be much greater near streams.
Surface Water: soil erosion	Minor	Moderate	With No Action, impacts depend on plan design and stormwater management. Offsite impacts to surface water from major excavation, stockpiling and hauling could be much greater near streams.
Surface Water: temperature	Negligible	Minor to moderate	With No Action, impacts depend on plan design and stormwater management. Offsite impacts to surface water from major excavation, stockpiling and hauling could be much greater near streams.
Surface Water: water quality	Minor	Minor on site; moderate to major if 500 acres or more soils and forest were eliminated at unknown borrow site.	With No Action, impacts depend on plan design and stormwater management. Offsite impacts to surface water from major excavation, stockpiling and hauling could be much greater near streams.
Groundwater	Negligible	Negligible to moderate on site; unknown at borrow location.	Offsite groundwater impacts uncertain
Land Use	Minor	Minor to major at borrow site unless already permitted.	Offsite development of such a large borrow site could have moderate to major land use impacts.
Vegetation	Minor	Negligible to minor at site. Major at borrow site unless already permitted.	Long term timber harvest potential would be greater under No Action.
Fish and Wildlife	Minor	Minor to major	Offsite impacts at borrow site (under No Action) could be moderate to major, depending on the acres of wildlife habitat is removed.

RESOURCE	ENVIRONMENTAL IMPACT - PROPOSED ACTION: PIT 7 PLAN	ENVIRONMENTAL IMPACT - NO ACTION	COMMENTS
Greenhouse Gas	negligible	Minor on site; much greater than Proposed Action.	No Action over time may increase tree growth and sequestration. GHG emissions during restoration under No Action would be far greater for many years.
Recreation	None	None	Future recreational use of lake is uncertain. Stream fishery habitat may be slightly improved under the Proposed Action. Onsite recreation would be tied to onsite access in either case. Impacts off site under No Action would depend on characteristics of the unknown borrow site.
Noise	Negligible	Major due to 4.8 million truck trips.	Project is farther away from residents than an identical plan with no noise impacts. Construction noise from trucks would be emitted for up to 10 years offsite under No Action.
Public Health and Safety	None	Moderate	National Highway Traffic Safety Administration data predicts one fatality, and 35 injuries per 100 million truck miles. If borrow site is 20 miles away- one fatality is predicted to occur under No Action.
Air Quality	Minor to negligible	Moderate	On-site emissions much greater than Plan. Offsite emissions far exceed Plan.
Transportation and Traffic	Negligible	Major.	Traffic impacts under No Action could generate more than 170 truck trips per hour each way.
Public Services	Negligible	Moderate to major	Road sweeping and potential repair on City, State, and County roads will increase for 10 years.

**Table 5 Resources and Decision on Inclusion in the EA**

DETERMINATION <sup>(a)</sup>	RESOURCE	RATIONALE FOR DETERMINATION
PI	Topography, Geology, and Soils	Potentially impacted and evaluated in this EA.
PI	Hydrology	Potentially impacted and evaluated in this EA.
PI	Land Use	Potentially impacted and evaluated in this EA.
PI	Vegetation	Potentially impacted and evaluated in this EA.
PI	Fish and Wildlife	Potentially impacted and evaluated in this EA.
PI	Greenhouse Gases and Climate Change	Potentially impacted and evaluated in this EA.
PI	Recreation	Potentially impacted and evaluated in this EA. Although public access is currently prohibited, and likely to be prohibited in the future, there are indirect impacts to recreation that require consideration.
PI	Noise	Potentially impacted and evaluated in this EA.
PI	Public Health and Safety (H&S)	Potentially impacted and evaluated in this EA. Although public access is prohibited, H&S is of sufficient concern that the analysis is presented.
NI	Historic and Cultural Resources	<p>No cultural resource issues arise from the Proposed Action. Previous cultural resources inventories found no cultural resources of scientific or humanistic interest that were eligible for inclusion into the National Register of Historic Places. Since 1984, there has been a Memorandum of Agreement between the mine operator (now TCM) and the Washington State Historic Preservation Office (SHPO) for cultural resource management and planning at the mine.</p> <p>On May 2, 2013, OSMRE sent SHPO a copy of TCM's Pit 7 Reclamation Plan. In the letter OSMRE explained its rationale for determining that there will be no historic properties affected by the Pit 7 Reclamation Plan, and requested concurrence with this finding or comments and recommendations. By letter dated May 2, 2013 SHPO concurred with OSMRE's determination that no historic properties would be affected by the Proposed Action. This letter is enclosed in Appendix A.</p> <p>There are therefore no historic or cultural resource impacts from the Proposed Action because the entire site has been previously disturbed, and because SHPO has concurred that there will be no impacts to cultural resources from the Proposed Action.</p> <p>No historic or cultural resource impacts are known from No Action because no borrow site has been identified; although offsite resources may exist, TCM and OSMRE anticipate that the selection of a borrow site for fill material under No Action can avoid historic or cultural resources.</p>

DETERMINATION <sup>(a)</sup>	RESOURCE	RATIONALE FOR DETERMINATION
PI	Air Quality	The Proposed Action is a shift in reclamation activity, and a reduction in earth movement and resultant vehicle emissions. However, the No Action alternative would increase air emissions compared to the Proposed Action (Pit 7 Plan). Therefore air quality is qualitatively discussed.
NI	Aesthetics	Pit 7 is not within sight of any public viewing areas or access points. There are no parks, public viewing areas, scenic rivers, scenic highways, or public spaces (schools, playgrounds, trails, etc.) within sight of the Pit 7 area. As a result, there are no potential visual resource impacts from Plan changes in the Proposed Action, or from No Action.
NI	Socioeconomics (Population and Housing)	This topic is not discussed. The mine employs approximately 50-70 people during the reclamation season (typically June–October) and approximately 13 people year-round. Neither the Proposed Action nor No Action would change employment to the extent that it would result in an increase or decrease in local population, or resultant change in housing demands.
PI	Transportation	Although the Proposed Action would have no impact on transportation or traffic, the No Action alternative creates significant new truck traffic and supports the addition of a <b>Transportation and Traffic</b> section in the EA.
NI	Utilities	Utilities are not discussed, as neither the Proposed Action nor No Action has (or would create) any increased demand for utilities (water, sewer, garbage, municipal solid waste collection, telephone, cable) or affect any such utilities.
PI	Public Services	Although the Proposed Action would not intersect or create any new demand on public services (police, fire, health care, road maintenance, or mail delivery), the No Action alternative is likely to create a need for improvements or maintenance to local highways. Road maintenance is discussed.
NI	Environmental Justice	No low income or minority populations live near the site. Environmental justice describes the potential for proposed actions to create disproportionate adverse effects on minority or low-income populations. Potential impacts from the Proposed Action would not disproportionately affect any offsite populations. The No Action alternative would entail an offsite borrow location of unknown location, and using existing public highways to haul materials at an unknown frequency. As a result, no impacts to any populations were documented in the EA, so no disproportionate impacts to minority or low-income populations could occur, and an environmental justice analysis is not included in this EA.

<sup>(a)</sup> PI = Potential for impact, analyzed in detail in the EA. NI = Not impacted by the Proposed Action or Alternatives or impact clearly insignificant; resource is possibly present, but not affected to a degree that analysis is required in the EA to determine significance.

**Table 6 Pit 7 Pre-Mine Land Use**

<b>CONDITION</b>	<b>LAND USE (ACRES) - DISTURBED BY MINING<sup>(a)</sup></b>	<b>LAND USE (ACRES) - UPLAND FORESTRY</b>	<b>LAND USE (ACRES) - LOWLAND FORESTRY<sup>(b)</sup></b>	<b>LAND USE (ACRES) - IMPOUNDMENTS OF WATER</b>	<b>LAND USE (ACRES) - TOTAL</b>
Pre-Mine	223	366	8	-	597

<sup>(a)</sup> Disturbed by Mining accounts for land that was mined prior to the enactment of SMCRA.

<sup>(b)</sup> Lowland Forest includes wetland and fish & wildlife habitat areas.



**Table 7 Plant Associations**

<b>MAJOR ASSOCIATIONS</b>	<b>INDIVIDUAL ASSOCIATIONS</b>	<b>MAP UNIT<sup>(a)</sup></b>	<b>PERMIT AREA (ACRES)<sup>(b)</sup></b>	<b>PERMIT AREA (%)</b>
Douglas fir	Douglas fir-salal	DFs	807	6
Douglas fir	Douglas fir-vine maple	-(c)	0	-
Douglas fir	Douglas fir-sword fern	DFsf	4,200	29
Red alder	Red alder-salal	RAs	102	<1
Red alder	Red alder-vine maple	-(c)	0	-
Red alder	Red alder-sword fern	RAsf	3,866	27
Oregon ash	Oregon ash-black cottonwood-skunk cabbage	A,BC,sk	541	4
Sedge-Meadow	Rough slough sedge-common rush	Sg, Md, Agr	786	5
Sedge-Meadow	Meadow fescue-Kentucky bluegrass	-(c)	0	-
Other	Douglas fir plantations	DF	574	4
Other	Disturbed areas		3,547	25
Other	Agriculture (Hay)	Agr(Hay)	15	<1
Other	Water		7	<1

<sup>(a)</sup> As shown in Figure 12.

<sup>(b)</sup> Total Permit Area is 14,445 acres.

<sup>(c)</sup> Associations grouped within the major vegetation associations.

**Table 8 Criteria for Adverse Impact Analysis – Pit 7 plan revision to the existing Centralia Mine Reclamation Plan**

<b>ELEMENT</b>	<b>NONE</b>	<b>NEGLIGIBLE</b>	<b>MINOR</b>	<b>MODERATE</b>	<b>MAJOR</b>
<b>Topography</b>	No change from existing plan	Change from existing plan but not having a measurable effect on final topography or other resources.	Change from existing plan but less than 100' average elevation change and similar topographic relief for > 50% of site	Change from existing plan of 100-200' of average elevation change, but still retaining similar topographic relief for > 50% of site	More than 200' of average elevation change compared to the PAP or elimination of similar topographic relief to >50% of the site.
<b>Geology and Soils</b>	No change from existing plan	Change from existing plan but not having a measurable effect on geology or soils.	Change from existing plan and noticeable but effects limited to Pit 7 site; possible effects on slope stability or temporary soil productivity or erosion potential	Change from existing plan but still meeting goals, and causing possible effects on slope stability, soil productivity loss more than a year, or erosion potential.	Not meeting original restoration goals. Major changes to local geology. Major loss of soils. Loss or damage to unique geological resource.
<b>Hydrology</b>	No change from existing plan	Flows similar to and nearly identical to existing plan, some modifications, but with little or no change (<10%) to off-site flows. Little or no change to groundwater consumption or recharge.	Surface water management flows changed but within 10-20% of existing plan; Does not violate water quality standards; Change in groundwater supply but meeting demands.	Surface water management changes off-site flows 20-50% beyond existing plan; creates minor flooding off site; creates minor exceedances in water quality standards.	Floodplain filling sufficient to increase flooding; violates water quality standards in a 303(d)-listed water; Flows > 50% of existing plan. Measurable change in downstream flooding potential or downstream impacts to fish. Potential for major change on local hydrology and watershed.
<b>Land Use</b>	No change from existing plan	Land use change minor and fully equivalent to or more valuable than planned future uses, or; Land use from action similar in value and function to existing plan.	Land use changes at Pit 7 new and different than plan but compatible with existing uses. limited to changes on-site.	Land use changes different than planned use with shifts in one or more land uses resulting in inconsistent land uses. Elimination or creation of new uses on or off site. Remaining site uses still compatible with potential future uses of existing plan (timber harvest or other uses).	Land use change eliminates potential for preferred land uses; offers no similar, preferred or allowed land use in its place. Land use result inconsistent with existing plans and policies. Changes off site and onsite.

<b>ELEMENT</b>	<b>NONE</b>	<b>NEGLIGIBLE</b>	<b>MINOR</b>	<b>MODERATE</b>	<b>MAJOR</b>
<b>Vegetation</b>	No change from existing plan	Changes similar to or equivalent to vegetation on site. Vegetation change <100 acres.	Changes have new measurable effects on vegetation of Pit 7 site (100-200 acres); new vegetation types; no off-site changes.	Changes affect vegetation on and off of the Pit 7 site compared to existing plan; some vegetation losses (100-200 acres) on and off site	Changes negatively affect vegetation or cause irreparable vegetation losses, or major offsite vegetation losses (200-400 acres).
<b>Fish and Wildlife</b>	No change from existing plan	Changes similar to or equivalent to fisheries values on site or off site.	Changes have new measurable effects on habitat of Pit 7 site; no off-site changes.	Changes affect fish and/or wildlife habitat on and off of the Pit 7 site compared to existing plan.	Changes negatively affect habitat and cause mortality of fish or wildlife species; likely to adversely affect a species protected under ESA; violates laws such as MBTA, GBEPA. Off-site fish or wildlife habitat losses.
<b>GHG Emissions</b>	No change from existing plan or reduction	Alternative does not increase construction GHG emissions or emissions are essentially the same in type and scope as existing plan. Permanent emissions or sequestration potential similar to existing plan.	Alternative increases GHG emissions but level of increase is below EPA permitting requirements for point sources Change in permanent emissions or sequestration potential less than 10% of existing plan.	Alternative increases construction GHG emissions above existing permitting levels. Change in permanent emissions or sequestration potential between 10 and 50% of existing plan.	Alternative increases GHG emissions to a rate exceeding levels requiring a permit (for point source) emissions. Permanent emissions or sequestration potential change between 50% and 100% of existing plan.
<b>Recreation</b>	No change from existing plan	Alternative slightly modifies but retains existing and future potential recreational opportunities resulting in the same or similar recreation value as the existing plan.	Alternative retains existing recreational opportunities but changes type or location or emphasis resulting in different recreation values on site.	Alternative shifts recreational opportunities from one type to another, including potential changes off site that are not part of existing plan.	Alternative results in a measurable change to recreational potential at the site and off of the site compared to the existing plan.
<b>Noise</b>	No change from existing plan; or less than plan	Types, frequency and location of noise emissions essentially the same as the existing plan without additional impacts to residential uses.	Either type or frequency or location of noise emissions changes, but noise emissions temporary, not leaving mine site, and only during plan construction.	Noise emissions increase from the Alternative but do not exceed noise standards at the boundary of the permit at the most sensitive receptors (residential).	Noise emission increases from the Alternative are predicted to exceed noise standards at the residential boundary of the permit.

ELEMENT	NONE	NEGLIGIBLE	MINOR	MODERATE	MAJOR
<b>Public Health &amp; Safety (H&amp;S)</b>	No change from existing plan	Slight modification to H&S outcome but only minor H&S issues or hazards at the site; minor or insignificant increased public or worker exposure; and little or no increased demands on H&S services.	Project creates new features that could create human H&S risks but risks are on site; and similar to other western Washington forests or timberland.	Alternative creates new H&S risks on or off the site that require new measures to reduce or avoid them. Likely and measurable increase in fatalities and injuries from the project.	Alternative creates certain unavoidable adverse risks, on and off site, which will create H&S hazards that need extraordinary preventive measures not anticipated in the existing plan, such as setbacks, fencing, warning signs, and security personnel. Probability of death or injury high.
<b>Air Quality</b>	No change from existing plan or less	Emissions at or below existing plan.	Emissions exceeding existing plan but still meets all air quality standards.	Emissions exceed existing plan. Violates air quality standards under poor air quality conditions.	Violates air quality standards more than 2x per year for two or more criteria pollutants.
<b>Transportation and Traffic</b>	No change from existing plan or less	Traffic on site.	Traffic offsite increases LOS by one increment but remains at Level B or above. No threat to severe LOS effect.	Traffic offsite increases LOS by one increment but remains at Level C or above. No threat to severe LOS effect.	Traffic levels potentially reduced to level D or F. Severe change in traffic patterns or traffic mode.
<b>Public Services</b>	No change from existing plan or less	Uses public services regularly but has no effect on adequacy or capacity.	Uses public services regularly but has measurable effect on adequacy or capacity and both are adequate.	May increase maintenance on city or county roads such that a service incurs increased costs.	May increase maintenance on city, county, state or federal highways such that a service incurs increased costs

GHG = greenhouse gas  
EPA = Environmental Protection Agency  
ESA = Endangered Species Act  
BGEPA = Bald and Golden Eagle Protection Act  
MBTA = Migratory Bird Treaty Act  
LOS = Level of Service

**Table 9 Physical Characteristics of the Proposed Pit 7 Lake**

Surface Area	130 acres
Average Depth	38 feet
Maximum Depth	67 feet
Outlet Elevation	231.8 feet above sea level
Volume	4,960 acre-feet
Watershed Area (including lake)	597 acres

**Table 10 Temperature and Dissolved Oxygen in Bosworth Lake and Roesiger Lake (south arm)**

LAKE	SURFACE AREA (ACRES)	VOLUME (AC-FT)	AVG. DEPTH (FT)	MAX DEPTH (FT)	DATE	TEMPERATURE (°C)		DISSOLVED OXYGEN (MG/L)	
						Surface	Bottom	Surface	Bottom
Bosworth Lake	105	3,671	35	79	Sep 29, 1998	Surface 19	Bottom 6	Surface 10	Bottom 0.2
Roesiger Lake (south arm)	140	3,000	22	70	Aug 6, 1998	Surface 24	Bottom 6	Surface 8	Bottom 5

Notes: AC-FT = acre-feet; FT = feet; °C = degrees Celsius; MG/L = milligrams per liter  
 Source: Norwest (2012)

**Table 11 Representative Water Quality of Surface Water Inflows to the Pit 7 Lake**

<b>WATER QUALITY PARAMETER</b>	<b>UNITS</b>	<b>RECLAIMED AREAS S-1 sample 12/21/2005</b>	<b>RECLAIMED AREAS S-1 sample 3/11/2009</b>	<b>RECLAIMED AREAS WP-1 sample 12/21/2005</b>	<b>GRADED (DISTURBED) AREAS Ditch 13 samples 12/26/2007</b>	<b>GRADED (DISTURBED) AREAS Ditch 13 samples 12/31/2007</b>	<b>GRADED (DISTURBED) AREAS Pit 7 inflow 3/11/2009</b>	<b>DISTURBED PIT 7 SURFACE WATER INFLOW ESTIMATE</b>	<b>RECLAIMED PIT 7 SURFACE WATER INFLOW ESTIMATE</b>
Alkalinity (Total as Bicarbonate)	mg/L	52	75	3	1.5	12	98	37	44
Carbonate	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Arsenic <sup>1</sup>	ug/L	<1	na	<1	<0.1	<0.1	na	<0.1	<1
Dissolved Cadmium	ug/L	0.100	0.070	0.420	0.65	0.19	0.24	0.36	0.20
Dissolved Calcium	mg/L	66	72	57	131	54	357	69	65
Dissolved Chloride	mg/L	3.9	3.4	6.7	2.6	3.2	3.5	3.1	4.7
Dissolved Iron	mg/L	0.051	0.027	0.018	0.266	0.281	0.269	0.27	0.03
Dissolved Lead <sup>1</sup>	ug/L	0.700	na	<0.5	<0.2	<0.2	na	<0.2	0.48
Dissolved Magnesium	mg/L	25.7	26.7	13.1	36.1	13.2	93.5	47.6	21.8
Dissolved Manganese	mg/L	0.059	0.104	1.930	3.88	2.15	1.76	2.60	0.70
Dissolved Mercury <sup>2</sup>	ug/L	<.01	na	<.01	na	na	na	<.01	<.01
Nitrate/Nitrite	mg/L	0.260	0.030	1.410	0.23	0.15	0.23	0.20	0.57
Dissolved Potassium	mg/L	3	2	4	3.47	2.27	9.37	5.04	3.13
Dissolved Selenium	ug/L	<1	0.1	<1	<0.1	<0.1	<0.1	<0.1	<1
Dissolved Sodium	mg/L	40	46	36	67.9	29.4	525	207.43	41
Dissolved Sulfate	mg/L	263	290	230	586	239	2500	1108.33	261
Field Conductivity	umhos/cm	120	410	110	770	350	2600	1240	213
Field pH	standard	7.000	6.700	7.000	5.6	7.0	6.7	6.43	6.90
Field Temperature	°C	4.8	3.1	6.9	4.5	0.9	9.1	4.8	4.9
Total Dissolved Solids	mg/L	433	700	357	910	380	3300	1530	497
Total Phosphorus <sup>1</sup>	mg/L	0.008	na	0.007	1.51	0.009	na	0.7595	0.008

Notes: mg/L = milligrams per liter; ug/L = micrograms per liter; umhos/cm = micromhos per centimeter; °C = degrees Celsius; na = not available

<sup>1</sup> Initial Pit 7 inflow concentrations estimated from average of Ditch 13 samples

<sup>2</sup> Initial Pit 7 inflow mercury concentrations estimated from S-1 and WP-1 samples

**Table 12 Comparison of Water Quality Data from Pit 7 with Mass Balance Estimates Using Two Different Estimates for Surface Water Inflows**

WATER QUALITY PARAMETER	UNITS	PIT 7 SURF -5 FT.	PIT 7 BOT +5 FT.	PIT 7 SURF -5 FT.	PIT 7 BOT +5 FT.	AVERAGE OF DITCH 13 AND PIT 7 SURFACE WATER QUALITY	RESULTANT PREDICTED PIT 7 WATER QUALITY	PIT 7 SURFACE WATER QUALITY (INFLOW)	RESULTANT PREDICTED PIT 7 WATER QUALITY
Date		11/30/2007	11/30/2007	3/11/2009	3/11/2009			3/11/2009	
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	72	72	98.4	98.4	37.3	61	98	115
Bicarbonate	mg/L	88	88	120	120	45.3	73.9	120	140
Carbonate	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	0.25	0.3	0.00025	0.1
Dissolved Arsenic	mg/L					0.00005	0.00013	NA	NA
Dissolved Cadmium	mg/L			0.00011	0.00008	0.00036	0.00032	0.00024	0.00021
Dissolved Calcium	mg/L			190	185	181	168	357	323
Dissolved Chloride	mg/L	4	4	3.3	3.5	3.1	3.0	3.5	3.4
Dissolved Iron	mg/L			0.054	0.014	0.27	0.2	0.269	0.2
Dissolved Lead	mg/L					< 0.0002	< 0.0005	NA	NA
Dissolved Magnesium	mg/L			52	50	48	44	94	84
Dissolved Manganese	mg/L			1.05	1.05	2.597	2.3	1.76	1.6
Dissolved Mercury	mg/L					< 0.00001	< 0.00002	NA	NA
Nitrate / Nitrite	mg/L			0.21	0.21	0.20	0.18	0.23	0.21
Dissolved Potassium	mg/L			6.19	6.00	5.04	4.9	9.37	8.7
Dissolved Selenium	mg/L			0.0002	0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Dissolved Sodium	mg/L			202	195	207	203	525	483
Dissolved Sulfate	mg/L	739	753	980	980	1,108	1,023	2,500	2,249
Field Conductivity	uS/cm	2,000	2,000	2,000	2,100	1,240		2,600	2,412.7
Field pH	standard units	7.5	6.76	8.32	7.75	6.43	NA	6.7	NA
Total Dissolved Solids	mg/L	1,200	1,300	1,400	1,400	1,530	1,448	3,300	3,007
Total Phosphorus	mg/L					0.76	0.70	NA	NA

Notes: mg/L = milligrams per liter; uS/cm = microSiemens per centimeter; NA = not assessed.



**Table 13 Pit 7 Reclamation Plan, Post-Mining Land Use**

<b>ALTERNATIVE</b>	<b>LAND USE (ACRES) - UPLAND FORESTRY</b>	<b>LAND USE (ACRES) - LOWLAND FORESTRY<sup>(a)</sup></b>	<b>LAND USE (ACRES) - IMPOUNDMENTS OF WATER</b>	<b>LAND USE (ACRES) - TOTAL</b>
Proposed Action (Pit 7 Lake)	429	38	130	597
No Action <sup>(b)</sup>	540	57	0	597

(a)Lowland Forestry includes wetland and fish & wildlife habitat areas.

(b)Does not include potential for >500 acres of eliminated land use at (unknown) borrow site.