

December 7, 2018

Project No. 923-1000-005.5000

Mr. Jerome Cruz

Washington State Department of Ecology
3190 - 160th Avenue SE
Bellevue, WA 98008

LANDSBURG MINE SITE – REMEDIAL ACTION PROGRESS REPORT FOR NOVEMBER 2018

Dear Mr. Cruz:

This letter presents the progress report on construction activities conducted during November 2018 at the Landsburg Mine Site (the Site) on behalf of the Landsburg Mine Site (the Group). This monthly report constitutes a progress report per Section XI of Consent Decree No. 17-2-28787-3 (November 06, 2017).

ACTIVITIES DURING REPORTING PERIOD

During the reporting period we performed the following activities:

- Construction activities started on November 5, 2018. During the month of November, work completed included clearing and grubbing of trees and brush within and along the east and west sides of the trench areas that will be backfilled in 2019 in accordance with the Cleanup Action Plan (CAP). These trench areas include Areas 7, 8 and 9, which are shown on the attached Site Map. Additional clearing was also completed along the west side of Area 6. Area 6 will also be partially backfilled during 2019 to create a buttress against the pillar wall between Areas 6 and 7. Photographs taken during the clearing activities are attached.
- Construction activities during November also included clearing of trees and brush along the proposed haul road, and initial grading the proposed haul road to the appropriate subgrade.
- Brush clearing and gravel pad construction was completed for the South Contingent Treatment System.
- The south sentinel well LMW-15 was drilled and installed during November in accordance with the Ecology approved Sentinel Well Installation Work Plan (Work Plan) (Golder March 5, 2018). The Work Plan indicated an assumed depth of approximately 165 feet below ground surface (bgs) to intercept groundwater in the area of LMW-15. The mine workings and confined groundwater were encountered at a depth of approximately 240 feet bgs. Static water level in the well is approximately 148 feet bgs.
- Access approval was received from Seattle Public Utilities and Seattle City Lights to drill the three northern groundwater monitoring wells along the pipeline access road north of the Site in accordance with the

Ecology approved 1,4-Dioxane Investigation Work Plan (Golder September 25, 2018). Drilling and installation of these three wells started on November 27, 2018 and was completed on November 30, 2018.

SCHEDULE STATUS

Construction activities are progressing in accordance with the CAP schedule requirements.

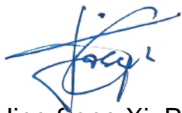
FUTURE ACTIVITIES

Work anticipated to be performed in December 2018 includes:

- Sample the three new wells along the pipeline access road north of the Site.
- Continue construction of the haul road.
- Complete the December 2018 groundwater monitoring.

If you have any questions related to this progress report, please contact Gary Zimmerman at (425) 883-0777.
Sincerely,

Golder Associates Inc.



Jing Song Xi, PE
Project Engineer



Gary L. Zimmerman
Principal

JX/GLZ/sb

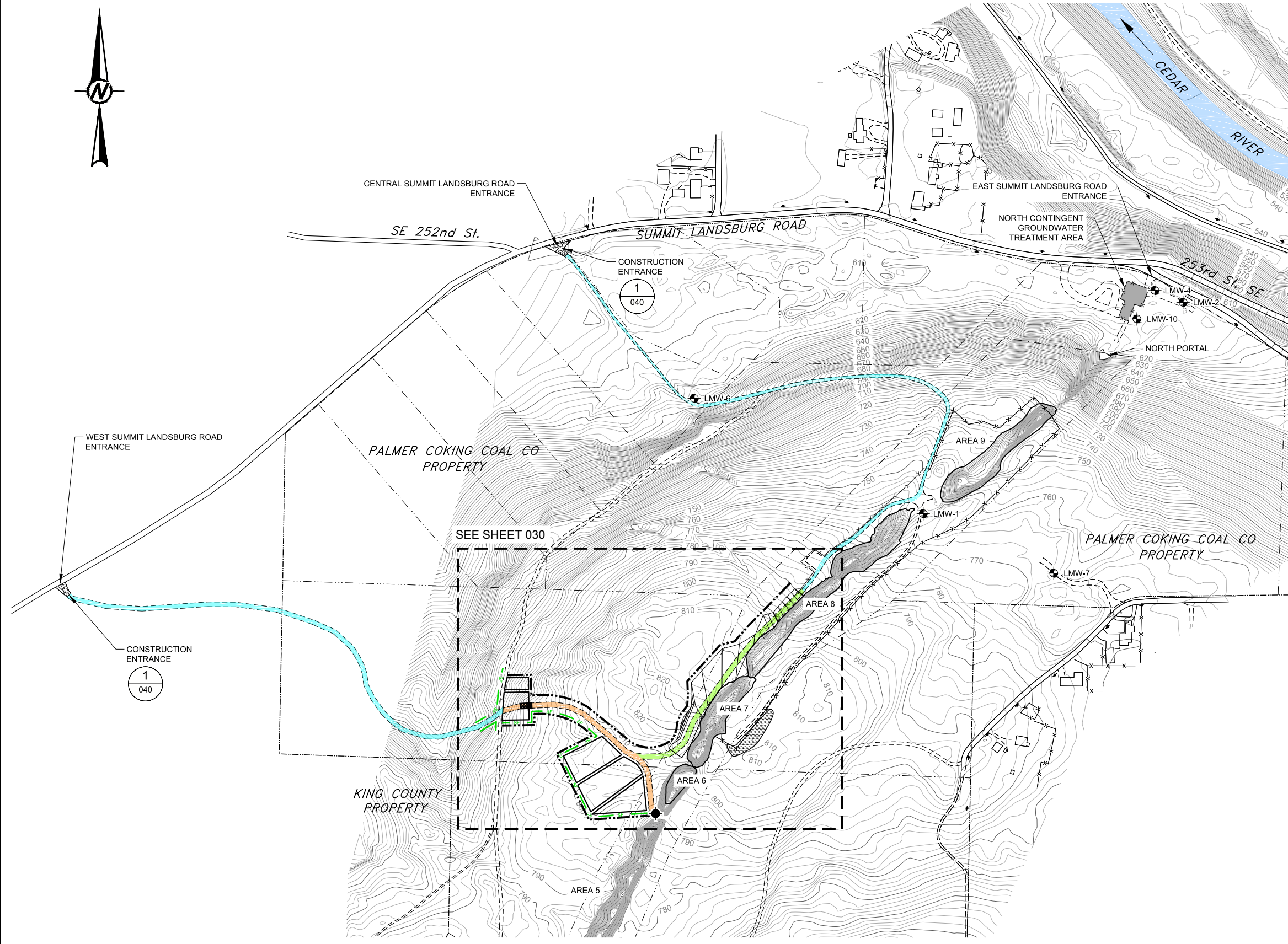
CC: Landsburg PLP Group

Attachments: Site Map
November 2018 Photolog

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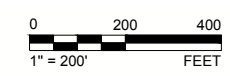


Path: \\redmond.golder.com\gis\projects\plm\redmond\landburg\stage1b\AccessRoadConstruction\1 File Name: 9231000005_1000_002.dwg | Last Edited By: krayer Date: 2018-05-22 Time: 3:48:52 PM | Printed By: VReyer Date: 2018-05-22 Time: 3:53:17 PM



- REFERENCE NOTES**
- BASE TOPOGRAPHY FROM SURVEY BY TRIAD ASSOCIATES, DATED 01/21/03.
 - HORIZONTAL DATUM: NAD 83 (91) WASHINGTON STATE PLANE, NORTH ZONE, US FOOT (BASED ON KING COUNTY SURVEY CONTROL POINT NUMBERS 6201, 6161 AND 6234)
 - VERTICAL DATUM: NAVD 88 (BASED ON CONVERSION OF GPS FIELD MEASUREMENTS USING THE GEOID96 PROGRAM)
 - CONTOUR INTERVAL: 2 FT
 - AS-BUILT LOCATIONS OF NORTH CONTINGENT GROUNDWATER TREATMENT AREA FEATURES FROM SURVEY BY PACIFIC GEOMATIC SERVICES, INC., DATED 09/16/08.
 - PROPERTY BOUNDARIES FROM KING COUNTY GIS DATA PORTAL, ACCESSED 3/20/18.
 - LOCATIONS OF ROADS ARE APPROXIMATE.
 - SITE CONDITIONS PRESENTED IN THESE DRAWINGS MAY HAVE CHANGED SINCE THE DATE OF SURVEY. PROJECT FEATURE LOCATIONS, CONFIGURATIONS, AND LAYOUTS ARE TO BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION BASED ON THE CONDITIONS ENCOUNTERED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ENCOUNTERED.

- LEGEND**
- LMW-2 EXISTING MONITORING WELL
 - NEW MONITORING WELL (LOCATION APPROX)
 - PROPERTY BOUNDARY
 - PARCEL BOUNDARY
 - EXISTING UTILITY POLE
 - EXISTING CHAINLINK FENCE
 - EXISTING BUILDING
 - EXISTING WETLAND
 - EXISTING PAVED ROAD
 - EXISTING UNPAVED ROAD
 - EXISTING ACCESS ROAD TO BE REPAIRED AS NECESSARY
 - NEW ACCESS ROAD - SEGMENT 1
 - NEW ACCESS ROAD - SEGMENT 2
 - PROJECT CLEARING LIMITS
 - SILT FENCE
 - 1 040 DETAIL NUMBER
 - 1 040 SHEET WHERE DETAIL IS SHOWN



| REV. | YYYY-MM-DD | DESCRIPTION | DESIGNED | PREPARED | REVIEWED | APPROVED |
|------|------------|-------------|----------|----------|----------|----------|
| A | 2018-05-22 | DRAFT | VMN | VMN | FSS | GZ |

SEAL

CLIENT
LANDSBURG MINE SITE PLP GROUP

CONSULTANT

REDMOND
18300 NE UNION HILL RD
REDMOND, WA
USA
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PROJECT
**LANDSBURG MINE SITE
MTCA REMEDIAL ACTION
STAGE 1B - ACCESS ROAD CONSTRUCTION**

TITLE
SITE OVERVIEW

| | | | | |
|---------------------------|---------------|-----------|--------|--------------|
| PROJECT NO. 9231000005 | PHASE 1000 | REV. A | 2 of 4 | SHEET 020 |
|---------------------------|---------------|-----------|--------|--------------|

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM AN STD

November 2018 Photo Log

Photo 1 – View at start of tree removal along the top of the west edge of the trench.



Photo 2 – Cut trees within trench, felled to lie against trench side-walls to allow removal with tree picker.



Photo 3 – View of Area 9 looking north from the southern tip. Wood chipping and wood stockpile area is on the left side.



Photo 4 – View of Area 8 looking north from the middle of the west side, after tree removal.



Photo 5 – View of Area 8 looking south from the north tip, after tree removal.



Photo 6 – View of south contingency treatment area that was cleared and rock pad placed.

